Chemistry Library

QC
770
.U56
v.6
no. 6B

AUTHOR INDEX

For each reference the digit preceding the dash is the volume number and digits after the dash are the abstract number.

AARON DAVID
6-1173
ABBOTT T A
6- 485
ABRAGAM A
6-1300 6-1847
ACCARY A
6-1156
ACCOUNTIUS OLIVER E
6- 208
ACHERMAN W L
6-1236
ACKERLIND C G
6- 596
ADAMS THOMAS J
6-1635
ADAMSON ARTHUR W
6- 87 6- 139 6-1123
ADER MARIE
6-1292
ADLAM J H
6-1493
AEPPLI H
6- 347 6- 417
AERONAUTICAL RESEARCH
CONSULTATIVE COMMITTEE
AUSTRALIA
6-1624
AHEARN A J
6- 967
AHMED A A
6-1049
AHRLAND STEN
6-1434
AITKEN P R
6- 423
AJZENBERG FAY
6- 536
ALBANSKII V L
6- 114
ALBERS-SCHONBERG H
6- 347
ALBERT PHILIPPE
6- 549
ALBRIGHT CHARLES H
6- 538
ALBURGER DAVID E
6-1530
ALDER KURT
6- 346
ALEXANDER B H
6- 603 6-1474
ALEXANDER GEORGE V
6- 69 6- 70 6- 158
ALFRED UNIV
6- 199
ALLARD GERARD A
6-1342 6-1572 6-1905
ALLEN AUGUSTINE O
6-1678
ALLEN BENNET M
6- 36
ALLEN JAMES S
6-1909
ALLEN K W
6-1886
ALLEN ROBERT C
6-1878
ALLEN S
6- 618 6-1470
ALLIS W P
6-1768
ALLRED V DEAN
6-1426
ALMQVIST E
6-1886
ALPHER RALPH A
6-1755
ALTER H W
6-1130
ALTLAND PAUL D
6-1090
ALVAREZ L W
6-1818
AMALDI E
6-1818
AMES LAB
6- 86 6- 157 6- 256
6- 275 6- 276 6- 519
AMES LAB
6- 558 6- 559 6- 560
6- 561 6- 562 6- 563
6- 573 6- 735 6- 879
6- 940 6-1028 6-1119
6-1171 6-1226 6-1464
6-1504 6-1531 6-1592
6-1629 6-1553 6-1859
AMHERST COLL
6-1425
ANDEM M R
6-1600
ANDERSON E G
6- 774
ANDERSON G M
6-1266
ANDERSON H C
6-1570
ANDERSON H L
6-1818
ANDERSON L C
6- 916
ANDERSON MARGARET E
6- 852
ANDERSON R A
6- 231
ANDERSON R CHRISTIAN
6- 104
ANDERSON WENDELL L
6- 517
ANGER H O
6- 521 6-1813
ANIANSSON G
6- 176
ANTHONY D S
6- 532
ARAKI GENTARO
6- 748
ARAMBOURG CAMILLE
6-1461
ARCAND G M
6-1682
ARCE R
6- 923
ARFKEN G B
6- 339 6-1844
ARGONNE NATIONAL LAB
6- 28 6- 77 6- 78
6- 125 6- 163 6- 164
6- 225 6- 381 6- 405
6- 500 6- 501 6- 502
6- 506 6- 520 6- 526
6- 556 6- 568 6- 625
6- 640 6- 679 6- 695
6- 763 6- 784 6- 863
6- 958 6-1046 6-1047
6-1048 6-1082 6-1083
6-1084 6-1135 6-1176
6-1260 6-1286 6-1287
6-1387 6-1414 6-1415
6-1422 6-1427 6-1428
6-1506 6-1527 6-1608
6-1609 6-1615 6-1616
6-1677 6-1694 6-1798
6-1829 6-1838 6-1906
6-1907
ARKANSAS UNIV
6-1134
ARMENTEROS R
6- 264
ARMOUR RESEARCH
FOUNDATION
6- 591 6- 504 6- 902
6-1498
ARMY MEDICAL RESEARCH
LAB FORT KNOX
6- 31 6- 62 6-1075
ARNER W J
6-1419
ARNOLD J T
6-1671
ARNOLD W A
6- 484
ARNOLD W R
6- 955
ARNSTEIN H R V
6- 571
ARONOFF S
6- 159 6-1704
ARROL W J
6- 151
ARTOM CAMILLO
6- 799 6-1081
ASARO FRANK
6- 415 6-1481
ASLING C W
6-1389
ASSET G M
6- 183
ATHERTON J E JR
6-1745
ATKINSON D E
6- 164
ATKINSON J R
6- 401
ATOMIC ENERGY COMMISSION
6-1187 6-1318
ATOMIC ENERGY PROJECT
CANADA
6-1494 6-1495 6-1505
6-1554 6-1802 6-1831
6-1854 6-1857
ATOMIC ENERGY PROJECT
UNIV OF CALIF
6- 508
ATOMIC ENERGY PROJECT
UNIV OF CALIF
LOS ANGELES
6- 12 6- 13 6- 35
6- 36 6- 37 6- 69
6- 70 6- 158 6- 765
6-1343 6-1780 6-1500
6-1600 6-1702
ATOMIC ENERGY PROJECT
UNIV OF ROCHESTER
6- 509 6- 510 6- 516
6- 528 6- 657
ATOMIC ENERGY PROJECT
WESTERN RESERVE UNIV
6-1379
ATOMIC ENERGY RESEARCH
ESTABLISHMENT HARWELL
BERKS ENGLAND
6- 135 6- 151 6- 155
6- 156 6- 181 6- 226
6- 271 6- 332 6- 358
6- 514 6- 544 6- 545
6- 639 6- 699 6- 849
6- 878 6- 956 6- 957
6-1003 6-1027 6-1185
6-1227 6-1228 6-1391
6-1423 6-1493 6-1505
6-1529
AUSTING MARY E
6- 31
AVERBACH B L
6- 595 6- 598 6- 618
6-1467 6-1470
AVERY E
6-1798
AXEL P
6-1052
AXELROD-HELLER DOROTHY
6-1389
AYANT YVES
6- 341
AZAM
6- 880
AZIMOV S A
6- 263

BACON G E
6- 721 6-1161 6-1162
BACQ Z M
6- 51 6-1385
BAER W H
6- 596
BAEYERTZ M
6- 902
BAGARYATSKII YU A
6- 244
BAGGE ERICH
6- 982
BAGGETT L M
6-1009
BAILEY R V
6- 185

BAINBRIDGE D W
6-1723
BAINBRIDGE KENNETH T
6- 734
BAIR JOE KEASY
6- 646 6- 647 6-1535
BAKER H DEAN
6- 627
BAKER HAYWARD R
6-1218
BAKER W H
6- 645
BAKER W R
6- 476 6- 486 6-1585
BAKER WILLIAM B
6- 647
BAKISH R
6- 600 6-1238
BAKKER C J
6- 420 6- 422
BALDINGER E
6- 314 6- 402 6-1018
6-1861 6-1895
BALDWIN ROBERT
6- 163
BALES P D
6- 183
BALIS M EARL
6-1112
BALLUFFI R W
6- 603 6-1474
BAME S J JR
6-1009
BANDTEL KENNETH C
6- 323
BANKS C V
6- 157
BANNERMAN R C
6- 307
BANNING FLOYD H
6-1727
BARBER A J
6-1422
BARBERA RICHARD
6- 69
BARCLAY F R
6-1851
BARENDREGT F
6- 437
BARET C
6-1699
BARINSKII R L
6- 136
BARKAS WALTER H
6- 298 6- 310 6- 320
6- 322 6- 378 6- 390
6- 656 6-1512 6-1515
BARKER C C
6- 819
BARKER K H
6- 264
BARKLEY LLOYD B
6- 91
BARNES BENJAMIN FRANKLIN
6-1170
BARNES S W
6-1883
BARNETT C F
6-1549
BARNHART W S
6- 465
BARODY E M
6- 898
BARRER R M
6- 190
BARRERE GILBERT
6-1290
BARRON E S GUZMAN
6-1084
BARSCHALL H H
6-1503 6-1860
BARTON J C
6- 614
BARUCH PIERRE
6-1642
BASKOVA K A
6- 395
BASSHAM J A
6- 167
BASTIN-SCOFFIER G
6- 428
BASU D
6- 729
BATDORF S B
6- 899
BATES L M
6-1102
BATTELLE MEMORIAL INST
6- 227 6- 273 6- 684
6- 898 6- 915 6-1577
6-1732 6-1736
BAUER F K
6-1087
BAUER H L JR
6-1457
BAY Z
6-1839
BAYER LISEL
6- 847
BEAMISH F E
6-1686
BEATTY ALVIN V
6- 24 6- 26
BEATTY K O JR
6-1446
BEAUGE R
6- 696
BEAUMONT R H JR
6-1656
BECK CLIFFORD
6-1194
BECK PAUL A
6-1242 6-1245
BECKER G
6-1309
BECKER JOSEF
6-1107
BECKER ROBERT A
6- 279
BEEBE R A
6-1425
BEHRENS C F
6-1376
BELINFANTE FREDERIK J
6- 744 6-1054 6-1056
6-1057
BELING JOHN K
6-1523
BELL P R
6- 533 6-1511
BELL R E
6- 426 6-1839
BELYAEV I N
6- 207
BENDICH AARON
6- 566
BENE GEORGES J
6-1307
BENEDICT JOSEPH T
6-1173
BENEDICT MANSON
6-1282
BENNETT EDWARD L
6- 850
BENOIST-GUEUTAL P
6- 977
BENSEY FRANK N
6- 617
BENSON A A
6- 167 6- 168 6- 531
BENSON JOHN A JR
6- 7
BENTE D
6- 66
BENTLEY RONALD
6- 571
BERESTETSKII V B
6- 326
BERG MARVIN
6- 33
BERGER L B
6- 126
BERGMAN A G
6- 96
BERLIN T H
6- 688
BERMAN ARTHUR I
6- 191 6- 334 6- 937
6-1778
BERNARDINI G
6- 672 6-1818
BERNAS RENE
6- 636
BERNHEIM FREDERICK
6-1590
BERNSTEIN HAROLD
6- 250
BERNSTEIN W
6-1507
BERTRAND DIDIER
6- 16 6- 17
BETHE H A
6-1819 6-1937
BEVER M B
6-1471
BEWICK H A
6-1686
BEWLEY D K
6- 404
BHABHA H J
6-1562
BHATTACHARYA P C
6-1757
BIEDENHARN L C
6- 339 6-1844
BIGELEISEN JACOB
6-1118 6-1792
BIGELOW J E
6-1561
BIGELOW R R
6-1599
BILLEN DANIEL
6- 29 6- 47 6-1079
BILLINGS MARTA S
6- 35
BIRGE ANN C
6- 737
BIRGE ROBERT W
6- 299 6-1512
BIRGER N G
6-1270
BIRKS J B
6- 306
BIRNBAUM W
6- 320
BISHOP A S
6- 347
BISHOP F W
6-1500
BISWAS S
6- 611
BLACK ARTHUR L
6- 796
BLACKBURN PAUL E
6- 88
BLACKMAN M
6-1274
BLAIR HENRY A
6- 509 6- 510 6- 516
6- 657
BLAKE C A
6- 180
BLASER J P
6-1021 6-1022
BLAU M
6- 642
BLEARS J
6- 583 6- 585
BLIZARD E P
6-1360
BLOMEKE J O
6- 147
BLOOMFIELD J R
6-1606
BLUM J M
6-1295
BLUMENTHAL H
6- 120
BLUMKIN S
6-1158
BLUNCK O
6-1889 6-1890 6-1891
BODE HANS
6- 829
BOEHM F
6-1021 6-1022
BOELTER L M K
6-1191
BOERSCH H
6-1208 6-1210
BOGAARDT MAARTEN
6- 396 6- 399
BOGANIK N S
6- 425
BOHLANDER A
6- 56
BOHLANDER ADAM
6-1383
BOKSENBOM AARON S
6- 860
BOLEY FORREST I
6- 735
BOLGIANO P
6- 688
BOLLMANN W
6-1007
BOLTAKS B I
6- 206
BOLTZ D F
6-1405
BOMMEL H
6-1854
BONANOMI J
6- 302
BOND V P
6- 23
BONDI A
6- 127
BONET-MAURY B
6-1603
BONFIGLIOLI GUIDO
6- 668
BONILLA C F
6- 579
BONNER T W
6-1459
BONNET L
6- 886
BONNIER G
6- 773
BOORSE H A
6-1280
BORG W A J
6- 73

BORGSTROM BENGT
6-1408
BORREL MARCEL
6-1141
BORST L B
6-1754 6-1860
BOSLEY W
6-1550
BOTH E
6- 785
BOTHNER-BY AKSEL A
6- 104
BOTKIN A L
6- 31 6-1075
BOUCHEZ ROBERT
6-1941
BOULLE ANDRE
6- 456
BOWE J C
6-1052
BOWEN D
6- 115
BOWEN VAUGHAN T
6- 503 6-1114
BOWMAN GRAY SCHOOL
OF MEDICINE
WAKE FOREST COLL
6-1081
BOYAR R E
6-1527
BOYD CHARLES A
6- 286
BOYD G E
6-1420
BRACE LAB OF PHYSICS
UNIV OF NEBRASKA
6-1528
BRADDICK H J J
6- 257
BRADEN C H
6-1033 6-1040
BRADFORD R S
6- 348 6-1418
BRADLEY A J
6- 827
BRADLEY L C
6- 743 6-1930
BRADY E L
6- 731
BRADY ROSCOE G
6- 173 6- 174
BRANDT R A
6-1174
BRANSDEN B H
6- 720
BRANYAN C E
6- 739
BRATCHER L MARTEL
6-1316
BRAUNER A R
6- 665
BREIT G
6- 724 6-1832 6-1887
6-1893 6-1894
BREITENSTEIN JOHN S
6- 911
BRESLIN A J
6- 788
BRETON D
6- 697
BRETSCHER E
6-1859 6-1860
BRETTON R H
6-1552
BREVOORT MAURICE J
6- 865
BREWSTER DWAINE A
6-1140
BRICK R M
6- 229
BRICKER C E
6-1400 6-1555
BRINKWORTH M J
6- 371 6-1003
BRISTEAU P
6-1789
BRITISH ALUMINIUM CO LTD
LONDON ENGLAND
6- 904
BRITTEN R J
6-1794
BRIX PETER
6- 693
BROBECK W
6-1481
BRODA E
6- 663
BROMBERG A V
6- 95
BROMLEY LEROY A
6- 254
BRONSON JOHN F
6- 477
BROOKHAVEN NATIONAL LAB
6- 85 6- 103 6- 104
6- 165 6- 224 6- 292
6- 315 6- 316 6- 336
6- 383 6- 406 6- 443
6- 492 6- 503 6- 507
6- 546 6- 551 6- 572
6- 626 6- 641 6- 642
6- 733 6- 734 6- 780
6-1086 6-1114 6-1115
6-1116 6-1165 6-1166
6-1182 6-1283 6-1315
6-1340 6-1373 6-1374
6-1388 6-1390 6-1463
6-1507 6-1525 6-1570
6-1544 6-1552 6-1553
6-1595 6-1628 6-1652
6-1678 6-1706 6-1746
6-1747 6-1792 6-1816
6-1817 6-1928
BROPHY GERALD P
6-1223
BROSI A R
6- 435 6- 436
BROUWER G P
6- 300
BROWN A F
6-1258
BROWN FRANK H JR
6- 209
BROWN FREDERICK C
6-1760
BROWN GEORGE BOSWORTH
6-1112 6-1178
BROWN H S
6-1754
BROWN K G
6- 180
BROWN MARY B
6-1382
BROWN SANBORN C
6-1490 6-1768
BROWN STEWART A
6-1618
BROWN W G
6-1176
BROWNE C I
6- 413
BROWNELL GORDON L
6- 654
BROWNELL L E
6- 916
BROWNING W E
6-1316
BRUES AUSTIN M
6- 500 6- 501 6- 506
6- 520 6- 526 6- 568
6- 625 6- 640 6- 763
BRUN EDMOND
6-1717
BRYANT L W
6- 675
BRYSK HENRY
6- 431
BUCHANAN DONALD L
6-1387 6-1509
BUCK THOMAS M JR
6-1480
BUCKALOO G WARREN
6- 659 6-1378
BUECHE A M
6-1413
BUILDING MATERIALS
RESEARCH LAB
MASS INST OF TECH
6-1437
BULLOCK M LOREN
6-1011
BUMILLER H
6- 522
BUNGE MARIO
6-1060
BURBANK ROBINSON B
6- 617
BUREAU OF MINES
6- 126 6- 862 6-1229
6-1627 6-1727
BUREAU OF MINES
BLUEMONT VA
6-1401
BURFORD W B III
6-1570
BURGE E J
6-1869
BURGY M T
6- 381 6-1903
BURKART M W
6- 600 6-1238
BURKE A W JR
6-1093
BURKE T G
6-1668
BURLING RICHARD L
6- 922
BURLINGAME LOUISE
6- 35
BURNETT W T JR
6- 49 6- 776 6-1080
6-1093
BURR JOHN G JR
6- 175 6- 179
BURRIS R H
6- 71
BURROW J H
6-1404
BURROWS H B
6-1328 6-1329 6-1330
6-1869
BURSON S B
6-1046 6-1907
BURTON MILTON
6-1676
BUSCH J S
6- 579
BUSHKOVITCH A V
6- 954
BUTLER C C
6- 264
BUTLER EDWARD E
6-1073 6-1085
BUTLER T A
6- 559
BUTTLAR H V
6-1409
BUTTON J C E
6- 195
BUYLE-BODIN MAURICE
6- 692
BYERRUM RICHARD U
6-1618

CACHON A
6- 264
CADY G H
6- 464
CAGLE CHARLES D
6- 781
CAHEN L
6- 220 6- 221 6- 222
CAHN R W
6- 226
CALIFORNIA INST OF TECH
6- 233
CALIFORNIA UNIV
LOS ANGELES
6-1191
CALIFORNIA UNIV
SCHOOL OF MEDICINE
6-1617
CALNAN E A
6-1478
CALVIN MELVIN
6- 14 6- 75 6- 167
6- 817 6- 831 6- 832
6- 854
CAMERINI U
6- 259
CAMERON A G W
6- 365 6-1871 6-1876
CAMPBELL C G
6-1557
CAMPBELL E C
6-1499
CAMPBELL I G
6-1088
CAMPBELL IRA L
6-1612
CANCER RESEARCH INST
NEW ENGLAND DEACONESS
HOSPITAL
6- 779
CANDLER C
6- 684
CANISIUS COLL
6-1674
CARBIDE AND CARBON
CHEMICALS CO K-25
6- 354 6- 817 6- 855
6-1663
CARBIDE AND CARBON
CHEMICALS CO Y-12
6- 110 6- 449 6- 905
CARLSON B C
6-1794
CARLSON J GORDON
6- 5 6- 43
CARLSON RICHARD R
6-1016
CARLSON THOMAS
6-1509
CARNEGIE INST OF TECH
6- 224 6- 597 6-1153
6-1154 6-1155 6-1544
6-1660 6-1771 6-1910
CARON MICHEL
6- 549

CARPENTER ARTHUR
6- 52
CARPENTER J E
6- 936
CARROL BENJAMIN
6-1019
CARSON S F
6- 178 6- 532 6-1070
6-1620 6-1697
CARSON W N JR
6- 196
CARTER J C
6- A63
CARTER S M
6-1033
CASATI ANNIBALE
6-1605
CASE INST OF TECH
6- 680
CASSELS J M
6-1A59 6-1887
CASSEN BENEDICT
6- 12
CASSIDY JUDITH
6-1511
CASWELL A E
6- 59
CATALANO EDWARD
6-1395
CAUGHLAN C N
6-1128 6-1129
CAVANAGH P E
6-1922
CAVE G C B
6- 98
CAWTHRON INST
6- A33
CECCHINI LOUIS P
6- A77
CENTRAL AEROSOL LABS
COLUMBIA UNIV
6- 609
CENTRAL AIR DOCUMENTS
OFFICE
6- 274
CHADWICK R
6-1252
CHAIKOFF I L
6- 798 6-1422
CHALMERS T A
6- 667
CHAMPION F C
6-1049
CHANDRASEKHAR S
6-1276 6-1277
CHANG L C
6- 600 6-1238
CHANG W Y
6- 265 6- 266
CHAPIRO ADOLPHE
6- 145
CHARD J E
6- A59
CHARLESBY A
6-1391
CHARPAK GEORGES
6-1355
CHASTEL RAYMOND
6-1331
CHATTERJEE S D
6-1764
CHAUDRON GEORGES
6- 549
CHEBINIAK P
6- 592
CHEMICAL AND
RADIOLOGICAL LAB
ARMY CHEMICAL CENTER
6-1611
CHEMICAL CORPS
6- 183
CHEN N K
6-1736
CHENOUARD J
6- 547
CHEW GEOFFREY F
6- 328 6-1031 6-1544
6-1A96
CHICAGO UNIV
6- 353 6- 784 6-1083
6-1084 6-1375 6-1384
CHICK D R
6-1026
CHILDS W J
6- 739
CHMUTOV K V
6- 95
CHOPPIN GREGORY R
6-1125
CHORNEY WILLIAM
6- 163
CHRISTENSEN BERT E
6-1179
CHRISTENSON C W
6- A58
CHRISTIAN DARLEANE
6-1504
CHRISTIAN J W
6-1476
CHRISTIE JAMES H
6- 33
CHRISTS COLL
CAMBRIDGE UNIV ENGLAND
6-1198
CHU H T
6- 579
CHUKHANOV Z F
6- 188
CHUN M E
6-1579
CIBULA A
6-1253
CLABAUGH W J
6-1200
CLADIS JOHN BAROS
6- 361 6- 785 6-1753
6-1A41
CLARK A C
6-1A00
CLAY C S
6- 348 6-1418
CLAY J
6- 258 6- 262 6- 439
CLELAND J W
6-1349
CLEWS C J B
6-1478
CLIFFORD ALAN F
6- 552
CLINTON LABS
6- 76
CLUSIUS KLAUS
6- 287
COATES G E
6- 134
COBAS AMADOR
6- 610 6- 923
COBB JOSEPH R
6- 588
COBBLE JAMES W
6- 643 6-1420
COCCONI G
6-1A72
COCKCROFT JOHN D
6- 514 6-1524
COFFINBERRY ARTHUR S
6-1729
COGAN DAVID J
6- 505
COHEN BERNARD L
6-1A82
COHEN MARTIN J
6-1A15
COHEN MORRIS
6- 594 6- 595 6- 598
6- 618 6-1467 6-1470
COHEN S G
6- 678
COHEN VICTOR W
6- 443 6-1165 6-1166
6-1928
COHN STANTON H
6- 28
COHN WALDO E
6-1172
COLBURN CHARLES B
6-1637
COLE L J
6- 23
COLE SANDFORD S
6- 911
COLER M A
6- 461
COLLEGE OF PHYSICIANS
AND SURGEONS
6-1388
COLLEGE OF SCIENCES AND
ARTS STATE COLL OF
WASH
6- 535
COLLI LAURA
6- 658
COLLINGS W DOYNE
6- 529
COLLINS CLAIR J
6- 175
COLLINS JOHN F
6- 900 6- 901
COLLINS T L
6- 991
COLNER WILLIAM H
6- 604
COLORADO AGRICULTURE
AND MEDICAL COLL
6- 979
COLTERYAHN L E
6- 234
COLUMBIA RADIATION LAB
COLUMBIA UNIV
6-1782
COLUMBIA UNIV
6- 288 6- 360 6- 469
6- 490 6- 579 6- 600
6- 627 6- 700 6- 984
6-1221 6-1222 6-1223
6-1224 6-1304 6-1431
6-1469 6-1670 6-1738
COLUMBIA UNIV
SCHOOL OF MINES
6-1173 6-1238
COMBE JEAN
6-1A81
COMINGS E W
6- 575
COMMISSARIAT A L ENERGIE
ATOMIQUE FRANCE
6- 547 6-1698 6-1699
CONARD G P
6- 618 6-1470
CONGER ALAN D
6- 4
CONNECTICUT AGRICULTURAL
EXPERIMENT STATION
6- 530
CONNOR R D
6-1A05
COOK CHARLES J
6-1339 6-1528
COOK G B
6- 356
COOK MELVIN A
6- A90 6- 894 6-1426
6-1687
COOKE W DONALD
6- 574
COOKE-YARBOROUGH E H
6- 303
COOPER C D
6-1929
COOPER MARGARET
6- 212
COOPEY R W
6- 513
CORAK WILLIAM S
6-1739
CORDNER G D P
6-1691
CORK J M
6- 739 6-1907
CORMACK D V
6-1102
CORNATZER W E
6-1081
CORNELL AERONAUTICAL
LAB INC
6- A76 6- 936
CORNELL UNIV
6- 108
CORROSION LAB
MASS INST OF TECH
6- 588
CORSON DALE R
6- 661
CORWIN ROBERT W
6-1492
CORYELL C D
6- 731
COSMIC RAY LAB
UNIV OF PUERTO RICO
6- 923
COTE G L
6-1665 6-1566
COTTON E S
6-1268
COULING L
6- 601 6-1473
COULTER LOWELL V
6-1121
COURTNEY WELBY G
6- A13
COVEYOU R R
6- 953
COWAN FREDERICK P
6- 103
COWING RUSSELL F
6- 779
CRAFT A
6- 348
CRAGGS J D
6-1A67
CRAIG J T
6- 163
CRAIG R S
6-1472 6-1479
CRAIG W F JR
6- 902
CRANDALL W B
6- 199
CRANDALL WALTER ELLIS
6- 362 6-1865
CRANE H R
6- 755
CRAWFORD J H JR
6-1349

CREUTZ E C
6- 224 6-1883
CROATTO UGO
6-1167
CROCE ROMEO
6- 215
CROSS WILLIAM G
6- 450
CROSSLEY F A
6- 907
CROTTY HOMER D
6-1065
CROUCH MARSHALL F
6-1759
CROWE K
6- 362
CROWE R W
6-1129
CROWLEY J
6-1422
CRUSSARD JEAN
6-1427
CRYOGENIC LAB
OHIO STATE UNIV
6- 88
CUEILLERON JEAN
6- 607
CUER PIERRE
6- 397 6-1880 6-1881
CULLIHAN JOHN H
6-1437
CUNNINGHAM B B
6-1753
CUNNINGHAM C W
6-1158 6-1159
CURIE DANIEL
6-1262 6-1313 6-1363
CURRAH J E
6-1686
CURRAN S C
6- 307 6-1559
CURTIS H O
6-1268
CURTISS CHARLES F
6- 286
CURTISS L F
6- 268
CUSHMAN BONNIE E
6- 278
CYNARSKI J
6-1425

DAANE A H
6- 276 6- 471 6- 472
6-1464
DAHL HARRY M
6-1221
DAINTY J
6-1508
DAITCH P B
6-1547
DALE J K
6- 163
DALITZ R H
6-1825
DALY LYLE K
6- 81 6- 102
DAMIANO V V
6-1658
DANDL R A
6- 436
DANIELS J M
6- 997
DANILOV V N
6- 245
DANYSZ M
6- 308
DARBY E K
6-1913
DARBY J
6- 255
DARBY J F
6- 611
DARMOIS EUGENE
6- 541
DA SILVEIRA MARIETA
6- 40
DAUTREPPE DANIEL
6- 692
DAVIDSON J N
6- 112
DAVIDSON W L
6- 442
DAVIES A J
6- 195
DAVIES E L
6- 757
DAVIES J H
6- 259
DAVIES R W
6- 184
DAVIES W T
6- 723
DAVIS R C
6-1511
DAVIS ROBERT J
6-1702
DAVISON B
6- 332
DAVOLL JOHN
6-1178
DAWSON J K
6- 457
DAWSON M H
6- 603
DAY M J
6- 434 6- 835
DAYHOFF EDWARD S
6-1785
DAYKIN P N
6-1932
DEACON E L
6- 938
DE AMICIS EGILDA
6- 779
DEBENEDETTI S
6-1771 6-1839 6-1910
DEBIESSE JEAN
6-1292
DE BOER J
6-1422 6-1855
DEBRUYN P H
6-1083
DECIUS J C
6-1417
DEEM H W
6- 915
DEFORD DONALD D
6- 98
DE GRAAFF W
6-1275
DE GROOT S R
6-1909
DE HAAN H J
6-1203
DEHAAS B WALLACE
6-1120
DEHMELT H G
6- 343 6- 988
DELABARRE YVETTE
6- 104
DELAHAY PAUL
6-1635
DE LA NOCEDA J GARCIA
6- 923
DE LATTRE A
6-1667
DELBART GEORGES
6-1240
DELBECQ CHARLES
6-1427
DEL CASTILLO G
6- 265 6- 266
DELWICHE EUGENE A
6-1070 6-1597
DEMEUR M
6-1362
DEMONT J
6- 469
DEMOS P T
6-1541
DEMOSS RALPH D
6-1619
DEMPSTER A J
6- 473
DENBIGH K G
6-1775 6-1776
DENT JAMES NORMAN
6- 111 6-1080
DEPARTMENT OF MINES AND
TECHNICAL SURVEYS
CANADA
6- 109 6-1220 6-1451
DEPIERRE VINCENT
6- 250
DERGE GERHARD
6- 599
DE SHALIT A
6-1925
DESIGNERS FOR INDUSTRY
INC
6-1724
DESMON LELAND G
6- 467
DESPREZ R
6-1289
DESTOUCHES-FEVRIER
PAULETTE
6-1367
DETRICK LAWRENCE E
6-1617
DEUTSCH MARTIN
6- 681 6-1543 6-1861
DEUTSCH ROBERT W
6- 390
DEVAY J E
6- 499 6- 759
DE VISSCHER MICHEL
6-1104
DEWAN J T
6-1486
DEWELL EDGAR HARRISON
6- 86
DEYSINE A
6-1603
DHARMATTI S S
6- 345 6- 924
DICKSON J M
6- 376
DIEKE G H
6-1573
DIENES G J
6-1152
DIETS R V
6-1400
DIMOND A E
6- 530
DIOGENOV G G
6- 94
DION H G
6- 968
DIPIETRO W O
6- 223
DIPPEL W A
6-1655
DIRAC P A M
6- 621
DIRITO V L
6-1549
DISTEFANO V
6- 21
DITTMAN A L
6-1566
DIVISION OF RAW
MATERIALS AEC
6- 212
DIVISION OF RESEARCH
AEC
6-1487
DIXON D
6-1559
DIXON JOSEPH A
6- 122
DIXON W R
6-1102
DOBBINS WILLIAM E
6-1597
DOBROTIN N A
6- 260 6- 261
DODGEN H W
6- 535
DODSON R W
6-1182
DOERNER ROBERT
6- 954
DOHERTY DAVID G
6- 150 6- 162 6-1094
DOHNE C F
6-1498
DOLAN THOMAS J
6- 193 6-1722
DOLE MALCOLM
6-1124
DOLL DENTON T
6-1465
DOMBROVSKAYA N S
6- 96
DOMINE-BERGES MARTHE
6- 456
DONAHUE T M
6- 927
DORN JOHN E
6- 231 6-1235
DOSSEY JAMES L
6-1783
DOUGHERTY JAMES
6- 15
DOUGLAS BODIE E
6-1633 6-1634
DOUGLAS JOHN E
6- 428
DOW CHEMICAL CO
6- 228 6- 814 6- 903
DOWBEN R M
6- 282
DOWDY A H
6- 35
DRAIN L E
6- 154
DRICKAMER H G
6- 537 6- 575 6- 800
6- 801 6- 804 6- 826
6- 895 6- 934
DRUYVESTEYN M J
6- 241
DUBININ G N
6- 912
DUCRET L P
6- 542
DUDLEY HORACE C
6- 494 6- 527
DUDLEY ROBERT AUGUR
6- 964

DUDZIAK WALTER F
6- 974
DUFFY J G
6- A70
DUFOUR CH
6-1350
DUHAMEL GERARD
6-1614
DUHAMEL J
6-1099
DUKE FREDERICK R
6- 573 6- 813
DUKE UNIV
6-1590 6-1595 6-1769
6-1929
DULIT EVERETT
6- 681
DUMOND JESSE W M
6- 444 6- 446 6-1861
DUNBAR D N F
6- 710
DUNCOMBE E
6- A64
DUNKERLEY F J
6-1658
DUNLAVEY DEAN C
6- 416
DUNN C G
6- 230
DUNN RAYBURN W
6-1790
DUNNING WAYNE W
6-1504
DUNSMORE HELEN S
6- A41
DURBIN R
6- 329
DUVAL XAVIER
6-1669
DUWEZ POL
6- 209 6- 233 6- 249
6-1196 6-1230 6-1231
6-1232 6-1243 6-1249
DZHELEPOV B S
6- 395 6- 421 6- 433
DZIUBA S
6-1089

EASTWOOD L W
6-1732
EBEL R A
6-1663
EBERLE ALLAN R
6-1401
EBNOTHER A
6- 570
EBY F S
6- 966
ECKERT ROGER E
6- A95
EDELEANU C
6-1219
EDELMANN ABRAHAM
6- 507
EDELSON D
6-1411
EDEN R J
6-1942
EDICK MELVIN
6- 796
EDLUND M C
6- 694
EDSE RUDOLPH
6- 274
EDWARDS D A
6- 235
EDWARDS GAIL P
6-1597
EDWARDS JAMES W
6- 86
EGAN W G
6-1800
EGGENBERGER C
6- 367
EHRENREICH RICHARD
6-1597
EHRLICH MARGARETE
6- 295
EICHHOLZ G G
6-1451
EIDINOFF M L
6- 61
EIMER LOIS
6- 89 6- 572 6-1182
EISENSTEIN JULIAN
6- 698
EISTER W K
6-1213
EL-BEDEWI F A
6- 375 6- 708 6-1692
ELIASSEN ROLF
6- 515
ELION GERTRUDE B
6-1112

ELLENBURG JANUS Y
6-1145
ELLINGER F
6-1097
ELLIOTT SYLVIA B
6-1500
ELMORE W C
6-1577
ELVING PHILIP J
6- 538 6- 806 6- 807
6- A08 6-1538 6-1639
6-1640
EMMONS A H
6-1610
ENGELKEMEIR D W
6- 475 6-1906
ENGINEERING RESEARCH
INST UNIV OF MICHIGAN
6- 916 6-1756
ENGLAND ROBERT D
6-1799
ENGSTROM ARNE
6-1101
ENRIGHT D P
6- 116 6- 117 6- 118
6- 119
ENTENMAN CECIL
6-1422 6-1593 6-1594
EPP E R
6-1102
EPSTEIN LEO F
6-1491
ERICSON R A
6-1548
ERNST ROBERT
6-1193
ERTAUD A
6- 696 6- 697
ESTRIN M
6-1496
EVANS ERSEL A
6-1626 6-1650
EVANS G E
6-1189 6-1549
EVDOKIMOVA T P
6- 795
EVERHART EDGAR
6-1768
EWING CURTIS T
6- 232 6-1444
EYGES L
6- 364 6-1326
EYRING HENRY
6- 498
EZMIRLIAN FLORITA
6- 69 6- 70

FACCHINI UGO
6- 658
FAIRBROTHER FRED
6- A10
FAIRCHILD L M
6- 4
FAIRSTEIN E
6- 435
FALK VAIRANT PAUL
6- 418
FARR RICHARD S
6-1083
FASSELL W MARTIN
6- A96
FAUNY G
6-1296
FAUNY M
6-1296
FAUQUEZ M
6- 696
FAUST W R
6-1498
FEATHER N
6-1558
FEDORUK S O
6-1102
FEILD R B
6-1439
FEITELBERG SERGEI
6- 519
FELD B T
6-1839
FELDMEIER J R
6- 920
FELDSTEIN O
6- 663
FERGUSSON G J
6-1814
FERLAND T
6-1398
FERMI E
6- 353 6-1818
FERNELIUS W CONARD
6- A08 6-1533 6-1634
FERRARO JOHN R
6- 78

FERRELL RICHARD A
6- 447
FESENKO E G
6- 207
FESHBACH HERMAN
6-1904
FIELD MARY JANE
6- 238
FINDLAY G R
6- 223
FINEMAN PHILLIP
6- 518
FINLAY W L
6- 908
FISCHER R B
6-1740
FISCHER VERA
KISTIAKOWSKY
6-1927
FISCHER WERNER
6- A24
FISHER C
6-1698
FISHER CH
6-1325
FISHER H
6-1422
FISHER INGA
6-1303
FISHER R W
6-1564
FISHER THOMAS F
6- 252
FISHLER M C
6- 23 6-1422
FISHMAN HERBERT
6-1534
FITZGERALD PATRICK J
6- 61
FLANAGAN R
6-1473
FLANAGAN W E
6- 598 6-1467
FLANNAGAN R
6- 601
FLEISCHMANN R
6- 712
FLEMING R O JR
6- 403
FLINN P A
6- 598 6-1467
FLOOD H
6-1398
FOEX MARC
6-1684
FOLDY L L
6- 382
FOLGER R L
6-1862
FOPIANO P
6- 618 6-1470
FORD A G
6-1033
FORD E
6- 930
FORSYTH P J E
6-1248
FORTY A J
6-1410
FOSS RODNEY H
6-1390
FOSTER J W
6- 532
FOWLER E C
6- 315 6- 316 6-1817
FOWLER J L
6-1456
FOWLER P H
6- 259
FOWLER R D
6-1570
FOWLER W B
6- 315 6- 316 6-1817
FOWLER WILLIAM ALFRED
6-1875
FOX M
6- 288
FOX R E
6-1263
FRANCIS HOWARD T
6- 604
FRANCIS J E
6-1511
FRANCIS N C
6- 973
FRANCK J
6- 732
FRANK WILSON J
6- 323
FRANKLIN E
6- 313 6- 590
FRANZ W
6-1369

FRANZINOTTI C
6- 259
FRASER G H
6-1814
FRAUENFELDER H
6- 347 6- 417
FREEDMAN M S
6-1048 6-1906
FREEMAN G P
6-1294
FREEMAN JAMES W
6-1207
FREIER GEORGE
6-1900
FREISER HENRY
6-1632 6-1654
FRENCH J B
6-1547
FRENKIEL F N
6- 331
FREUND HARRY
6-1143
FREY D N
6-1207
FRIEDBERG FELIX
6-1696
FRIEDBURG HELMUT
6-1335
FRIEDELL HYMER L
6- 33 6-1378 6-1379
FRIEDLAND STEPHEN S
6- 312
FRIEDMAN HELEN L
6- 976
FRIEDMAN LEWIS
6- 551
FRISCH O R
6-1754 6-1859
FRITH WILLIAM C
6- A10
FROEHLICH FRITZ E
6- 924
FROST R H
6- 945
FRUSH H L
6-1430
FRY ARTHUR
6- A17 6- 831 6- 872
6- A54
FRY W F
6- 327
FRYER G
6-1916
FUCHS L
6-1260
FUJIWARA SHIZUO
6-1142
FUKS H A
6- 189
FUNDINGSLAND O T
6-1490
FURBERG S E
6-1353
FURMAN N HOWELL
6- 90 6- 574 6-1400
6-1655
FURTH J
6- 20 6- 25 6- 776
6-1071 6-1076 6-1080
6-1117 6-1598 6-1599
FUYAT RUTH K
6-1452

GADSDEN E
6-1080
GAGLIARDI E
6-1402
GAITHER NENITA
6- 48
GALANIN A D
6- 455
GALBRAITH W
6-1A51
GALLONE S
6-1934
GALLOP J W
6-1024
GAMBLE LEON W
6-1144
GAMOW G
6-1754
GANZ AARON
6- 74
GARBER H J
6-1440 6-1441
GARFUNKEL M P
6- 920
GARRETT C
6-1102
GARRIGUE HUBERT
6- 429 6-1358
GARRISON WARREN M
6- 152 6- 153
GASSTROM R V
6-1105

GATES AND CHELLIN LABS
OF CHEMISTRY CALIF
INST OF TECH
6- 136
GATTI EMILIO
6- 658
GAUNT J
6- 155
GAUZIT MAURICE
6-1642
GAY WALTER E
6-1206
GEACH G A
6-1256
GECKLER R P
6- 140 6-1108
GEIGER KLAUS
6-1926
GEILING E M K
6- 74
GEMMILL CHALMERS L
6- 80 6- 803
GENDRON PIERRE R
6- 664
GENERAL ELECTRIC CO
6- 230 6-1717 6-1723
GENERAL ELECTRIC
RESEARCH LAB
6-1239 6-1475
GEOLOGICAL SURVEY
6- 213 6- 214 6- 549
6- 764 6-1136 6-1452
6-1453 6-1454 6-1455
6-1456 6-1457 6-1458
6-1459
GERHART J
6-1911
GERSCH MANFRED
6-1381
GEST HOWARD
6- 546
GHERI HERMA
6-1767
GHIORSO ALBERT
6- 357 6- 410 6- 412
6- 736
GHOSH S K
6-1A24
GIACOMELLO GIORDANO
6-1167
GIBBS JULIAN H
6- 131
GIBBS MARTIN
6- 165 6- 546 6-1619
GIBSON W
6- 544 6- 545
GIBSON W M
6-1330 6-1869 6-1870
GILARDONI ARTURO
6-1613
GILBERT F C
6- 390 6-1030
GILBERT W S
6- 701 6- 702
GILBERT WILLIAM
6-1A63
GILE JEANNE D
6- 152 6- 153
GILES NORMAN H JR
6- 24 6- 26
GILES PETER C
6- 656
GILL P S
6- 268
GILLAIN F
6-1560
GILLIESON A H C P
6- A49
GILLON L
6-1542
GIMENEZ C
6- 587
GINSBURG J
6-1110
GINZBURG L I
6- 581
GJOSTEEN O G
6- 219
GLAUBER ROY J
6- 745
GLENDENIN L E
6-1327
GLENN WILLIAM E
6- 289
GLENNAN T KEITH
6-1187
GLOTZER D J
6-1606
GODDARD D R
6- 194
GOFF JOHN L
6- 505
GOFMAN JOHN W
6- 19 6- 38

GOKHALE BHASKAR
GANGADHAR
6- 97
GOLANT V E
6- 951
GOLDBERG H D
6- 467
GOLDBERG M I
6- 467
GOLDBERG NEWTON N
6- 91
GOLDBERGER MARVIN L
6- 328 6-1039
GOLDBLITH S A
6- 511
GOLDEN L B
6-1236
GOLDFEDER ANNA
6-1091
GOLDHABER M
6- 734 6-1839 6-1909
GOLDHOFF R M
6-1732
GOLDMAN MORTON I
6- 515
GOLDSTEIN J H
6-1673
GOLDSTEIN LOUIS
6- 726 6-1546 6-1830
GOMBERG H J
6- 916
GOODMAN RAYMOND D
6- 13 6- 37 6- 765
GOODRICH B F CO
6- 442
GOODWIN H B
6- 227
GOODWIN W E
6-1087
GORA E
6-1935
GORBUNOV N I
6- 782
GORDON E LEITER
6-1606
GORDON LOUIS
6-1174
GORDON PAUL
6-1433 6-1745
GORDON S A
6- 164
GORDON SHEFFIELD
6- 556 6-1676
GORELIK S I
6-1214 6-1215
GORMAN ARTHUR E
6-1195
GORTER C J
6- 239
GOTTSTEIN K
6- 391
GOUDSMIT S A
6-1283
GOULD R GORDON
6- 565
GOURLEY D R H
6- 790 6- 802
GOVE H E
6-1918
GOWARD F K
6- 699 6- 709
GRACE M A
6- 997 6-1915
GRAEVSKAYA YA I
6- 261
GRAF H
6-1098
GRAFF A P
6-1589
GRAHAM DEAN M
6- 19
GRAHAM R L
6- 426
GRAND J A
6-1444
GRANGER HARRY C
6- 214 6-1457
GRASSI R C
6-1723
GRAUL E H
6-1679
GRAVES ELIZABETH
6- 305
GRAVESON ROBERT T
6- 628
GRAY J LORNE
6-1416
GRAY P M J
6-1688
GRAY ROBERT V
6-1445
GRAY SEYMOUR J
6- 7 6- 9
GREEN F P
6-1535

GREEN J H
6-1679
GREEN JACK
6-1222
GREEN L
6-1721
GREEN L JR
6-1197
GREEN LEON JR
6-1232
GREENAWAY H T
6-1259
GREENBERG D H
6- 700
GREENBERG DAVID M
6- 171
GREENEWALD H
6- 229
GREENFIELD M A
6- 13
GREENHOUSE HAROLD M
6- 208
GREENING J R
6- 392 6- 730
GRELE MILTON D
6- A66
GRIEL JOHN V
6-1149
GRIGOROV N L
6- 261
GRILLY E R
6-1774
GRIMALDI F S
6-1136
GRISARD J W
6-1159
GRIVET PIERRE
6- 454
GROBECKER DOUGLAS W
6-1465
GRODZINS LEON
6- 265
GROETZINGER GERHART
6-1A99
GROSSE ARISTID V
6- 129 6- 132
GROSSKINSKY OTTO ALFRED
6- 569
GROSSWEINER L
6-1287
GROVE D J
6-1263
GROVE D M
6- 190
GRUMMITT W E
6-1A57
GRUNE WERNER N
6-1597
GRUNER JOHN W
6- A91
GRUNLAND JEAN M
6- 139
GRUTTNER BARBARA
6- A21
GUDTSOV N T
6- 912
GUEBEN GEORGES
6-1540
GUERON J
6- 547
GUNN J C
6-1A68
GUNSALUS I C
6- 165
GURIAN JOAN M
6- 784
GURIN SAMUEL
6- 174
GURINSKY DAVID H
6- 224 6-1315
GURNEY R
6-1414
GUSEVA L N
6- 242
GUSTAFSON GORDON E
6- 50
GUTH EUGENE
6-1902
GUTOWSKY H S
6- 351
GUTTAG NORMA S
6-1136

HAAS CHARLES G
6-1631 6-1533
HABER-SCHAIM URI
6-1762
HADDEN R J B
6- 271
HADER RODNEY N
6- 914
HADLEY JAMES WARREN
6- 361 6- 716
HADORN ERNST
6- 767
HAEFNER RICHARD R
6- 691
HAFSTAD LAWRENCE R
6-1318
HAHN B
6- 402
HAHN RICHARD B
6-1648 6-1649
HAHN T M
6-1535
HAINES H R
6-1228
HAISSINSKY MOISE
6- 144 6- 146 6- 837
HAKEN H
6- 754
HALBACH K
6- 314
HALBERSTADT J
6- 305
HALES R W
6- 670
HALEY THOMAS J
6-1600 6-1617
HALG W
6- A38 6-1924
HALL B VINCENT
6-1608
HALL H TRACY
6-1412
HALL HARVEY
6-1034
HALL JAMES L
6-1125
HALL ROBERT H
6- 528
HALL W H
6- 605 6- 606
HALLER GEORGE L
6- A08
HALPERN J
6- 706
HALPERN OTTO
6-1014 6-1034
HAMERMESH MORTON
6- 679
HAMILTON DONALD R
6- 356
HAMILTON JOSEPH G
6- 152 6- 153 6- 496
6-1389 6-1422
HAMMER P C
6- 948 6- 949 6- 950
6-1796
HAMMOND CAROLYN W
6- 784 6-1384
HANCE PAUL D III
6- 406
HANDFORTH S L
6-1571
HANFORD WORKS
6- 105 6- 196 6- 513
6-1211 6-1442
HANSEN R D
6-1733
HANSON A O
6- 480 6-1035 6-1036
6-1037 6-1576
HARDWICK J
6- 313 6-1802
HARING M M
6- 960 6-1278
HARMAN C G
6- A84
HARRER J M
6-1527
HARRINGTON H
6- 659
HARRIS G B
6-1477
HARRIS J
6- 134
HARRIS JOHN N
6- 191 6- 937
HARRIS WILLIAM M
6- 338
HART EDWIN J
6-1677 6- 556
HARTMANN HELLMUTH
6- A11
HARTMANN HERMANN
6-1644 6-1645 6-1647
HARTMANN IRVING
6-1627
HARTNETT J P
6-1200
HARVARD UNIV
6- 336
HARVARD UNIV
MEDICAL SCHOOL
6- 758 6- 791 6- 793
HARVEY G G
6-1750
HARVEY ROBERT L
6-1611
HARWELL GEORGE T JR
6-1061
HARWOOD JULIUS J
6- 210
HASLAM R N H
6-1012 6-1332 6-1354
6-1A61
HASTINGS A BAIRD
6- 758 6- 791
HASZELDINE R N
6- 553 6-1157
HATTON J
6- 255
HAUFFE KARL
6-1683
HAUGSNES J
6- 644
HAUPTSCHEIN MURRAY
6- 129 6- 132
HAVENS W W JR
6- 984 6-1304
HAWKINS NORVAL J
6-1165
HAWORTH L J
6-1A83
HAYAKAWA S
6-1A12
HAYES EARL T
6-1229
HAYES F NEWTON
6- 294 6-1390
HAYES JOHN R
6-1406
HAYES S
6- 601 6-1473
HAYES THOMAS L
6- 38
HAYNES C W
6- 601 6-1474
HAYS E E
6- 481 6-1283
HAZEN W E
6-1756
HAZLETT T H
6-1733
HECKMAN HARRY H
6- 319 6- 322
HECKROTTE W
6- 975
HECQ M Y
6-1542
HEDBERG KENNETH
6- 136
HEER E
6- 347
HEIKKILA W
6- 930
HEISLER CHARLES
6-1378
HEITMAN HUBERT JR
6- 796
HELLER R E
6- 941
HELLER ROBERT B
6- 954
HELLER Z H
6-1032
HELLWEGE A M
6-1272
HELLWEGE K H
6-1272
HENDERSON JOSEPH E
6- 929
HENDERSON W J
6-1557
HENGLEIN ARNIM
6-1284
HENLEY E
6-1512
HENLEY ERNEST J
6- 660
HENNIG GERHART
6-1415
HENRI VICTOR P
6-1421
HENRICH L R
6- 975
HENRY E C
6- 200
HENRY KATHERINE E
6- 494
HENSEN J
6- 31
HENSLEY EUGENE B
6-1486
HEPNER W A
6-1059
HERBST H J
6- 109
HERCZEG C
6-1698
HERIC E L
6- A68
HERMAN ROBERT C
6-1755

HERMON S E
6-1407
HERPIN A
6-1350
HERRE MYRON J
6- 914
HERSKOWITZ IRWIN H
6- 769
HERVE A
6- 51 6-1385
HESS DANIEL N
6- 175
HESS DAVID C
6- 972 6-1327
HESS W
6- 361 6- 388
HESS WENDELL F
6- 886
HEUMANN F K
6-1130
HEUSINKVELD M
6-1900
HEUSTIS ALBERT E
6-1096
HEWITT JOHN E
6- 38
HEWSON E WENDELL
6- 676 6-1516 6-1517
6-1518 6-1519 6-1520
HEYWOOD W A
6-1707
HIBBERT CELESTA J
6-1491 6-1707
HICKAM W M
6-1263
HIGHMAN BENJAMIN
6-1090
HIGINBOTHAM W A
6- 479
HILBORN JOHN W
6-1220
HILDEBRAND R H
6- 655 6- 670
HILL A G
6-1750
HILL D G
6- 180
HILL D L
6- 696
HILL E L
6- 637
HILL GEORGE RICHARD
6- 897
HILLGER R E
6-1521
HILLIARD J
6- 598 6-1467
HILSE R M
6-1114
HILST G R
6-1442
HILTON CLIFFORD L
6- 806
HINTENBERGER HEINRICH
6- 290
HIRSCH CHARLES E
6-1211
HIRSCHFELDER JOSEPH O
6- 286
HIRST F
6- 710 6- 711
HITCHINGS GEORGE H
6-1112
HODGE E B
6- 163
HODGSON P E
6-1766
HODGSON WILLIAM
6-1128 6-1129
HOEKSTRA H R
6- 467
HOERGER EARL
6- 850
HOERLIN HERMANN
6- 311
HOFSTADTER R
6-1806
HOHMANN EMIL
6- 824
HOLDSWORTH J F
6- 875
HOLLADAY J W
6-1732
HOLLAENDER ALEXANDER
6- 47 6- 49 6-1079
HOLLCROFT JOANNE WEIKEL
6-1082 6-1607
HOLLEY CHARLES E JR
6-1131
HOLLOMON J H
6-1239
HOLLOWAY G E
6- 946
HOLMES D K
6- 695 6-1000
HOLMES JOHN R
6- 445
HOLMES S G
6- 797
HOLT N B
6-1430
HONEYCOMBE R W K
6-1250 6-1254 6-1255
HOOD RICHARD
6- 850
HOOPER J E
6-1765
HOOPER W H L
6-1252
HOOVER J I
6- 946 6-1898
HOOVER MORGAN M
6- 240
HOPPER V D
6- 611
HOREMAN H W
6- 300
HORIZONS INC
6- 236 6-1737
HORN F HUBBARD
6-1264
HORNBECK JOHN A
6- 931 6- 947
HORNBERGER WILHELM
6- 42
HORNYAK W F
6- 641
HOROWITZ J
6-1300
HORRIGAN ROBERT V
6-1552 6-1706
HORSLEY R J
6-1332
HORTON W S
6- 951
HOUGH E W
6-1164
HOUTERMANS F G
6-1809
HOWARTH L
6-1716
HOWATSON A F
6- 401
HOWELL LAWRENCE J
6-1173
HOWELL W D
6-1495
HOWELLS G A
6-1505
HOWTON DAVID R
6-1702
HSU EN-YUN
6- 184
HU F N
6- 797
HU HSUN
6-1242 6-1245
HUBBARD D O
6- 470
HUBBARD E L
6-1901
HUBBARD HARMON
6-1481
HUBER ELMER J JR
6-1131
HUBER O
6-1925
HUBER P
6- 402 6-1018 6-1859
6-1895
HUBERT PIERRE
6- 281 6- 741
HUBY R
6-1858
HUDES I
6-1758
HUDSON DONALD E
6- 942 6- 968
HUDSWELL F
6- 639
HUGHES A W
6- 478
HUGHES D J
6- 381 6-1860 6-1903
HUGHES I W
6- 819
HUMBEL F
6-1925
HUME DAVID N
6- 98
HUMMERS W S
6-1396
HUMPHREY WATTS JR
6-1899
HUNT ERNEST L
6- 111
HUNTEN D M
6-1849
HURST G S
6-1288
HURST R
6- 833
HURST WILLIAM M
6-1116
HUSTON J L
6-1626 6-1650
HYDE EARL K
6- 818
HYDRODYNAMICS LABS
CALIFORNIA INST OF
TECH
6- 184

IKENBERRY LUTHER C
6-1139
ILLINOIS INST OF TECH
6- 552
ILLINOIS UNIV
6- 537 6- 543 6- 575
6- 800 6- 801 6- 804
6- 826 6- 895 6- 934
6-1608 6-1708
ILLINOIS UNIV
ENGINEERING EXPERIMENT
STATION
6-1439 6-1722
INALL E K
6-1338
INDENBOM V L
6- 330
INGHRAM MARK G
6- 288 6- 972 6-1327
6-1793
INGLIS D R
6- 405 6-1839
INSTITUTE FOR ATOMIC
RESEARCH IOWA STATE
COLL
6- 813
INSTITUTE FOR CANCER
RESEARCH PHILADELPHIA
6- 760 6- 761 6- 792
6- 794
INSTITUTE FOR NUCLEAR
STUDIES UNIV OF
CHICAGO
6-1754 6-1793 6-1818
6-1819 6-1833 6-1839
6-1859 6-1860 6-1861
6-1883 6-1887 6-1909
6-1931
INSTITUTE FOR THE STUDY
OF RATE PROCESSES
UNIV OF UTAH
6- 890 6- 894 6- 896
6- 897 6-1426 6-1637
6-1687
INSTITUTE OF
ENGINEERING RESEARCH
UNIV OF CALIFORNIA
6- 201 6- 202 6- 231
6-1200 6-1235 6-1733
INSTITUTE OF
RADIOBIOLOGY AND
BIOPHYSICS
UNIV OF CHICAGO
6- 10 6- 784
INTRATER J
6- 600 6-1238
IOWA STATE COLL
6- 159 6- 812 6-1072
IRVINE JOHN W JR
6-1853
IRVING J
6-1868
ISBELL H S
6-1430 6-1700
ISHIBASHI S
6- 892

JACCARINO VINCENT
6-1310
JACKSON HARRIS
6- 60
JACOBSEN J C
6-1909
JACOBSOHN KURT P
6- 49
JACOBSON L
6-1422
JACOBSON MURRAY
6-1627
JACQUET PIERRE A
6- 248
JAEGER G
6-1726
JAFFE ELIZABETH B
6- 764
JAFFEE R I
6- 908 6-1732
JAGEL R C
6-1431
JAHN H A
6-1364

JAKOBSON MARK J
6- 324 6- 671
JAMES ARTHUR G
6-1103
JAMES HUBERT M
6- 557
JAMES J C
6- 564 6- 841
JAMES RALPH A
6- 736
JANNOT M
6-1289
JANOSSY LEONIE
6- 616 6- 753
JANSSEN E F
6-1375
JARBOE CHARLES HARRY
6- 851
JARY ROBERT
6- 856
JASTROW R
6- 686 6-1834
JAUCH J M
6-1A46
JEFFERSON W E
6- 532
JEFFRIES C D
6-1A50
JENKINS A E
6-1247
JENKINS F A
6- 460
JENKINS WILLIAM A
6- 284
JENNY L
6- A38
JENSEN J HANS D
6-1A38 6-1839
JENSSEN GUDBRAND
6- 309
JENTSCHKE W K
6- 966
JET PROPULSION LAB
CALIF INST OF TECH
6-1066 6-1164 6-1196
6-1230 6-1231 6-1232
6-1233 6-1234
JOHANSON CARL-ERIK
6-1105
JOHANSSON SVEN A E
6-1803
JOHNS H E
6-1102 6-1332
JOHNS HOPKINS UNIV
6- 6 6- 789 6- 883
6- 961 6-1165 6-1509
6-1662
JOHNSEN K
6-1337
JOHNSON ALDIE E JR
6- 899
JOHNSON H A
6-1200
JOHNSON H R
6- 548
JOHNSON M H
6- 622
JOHNSON N K
6- T56
JOHNSON T H
6-1818
JOHNSON THOMAS H
6-1487
JOHNSON VIRGIL R
6- 985 6- 987
JOHNSON WALTER H JR
6- 991
JOHNSTON HERRICK L
6- 88
JOHNSTON REED H
6- 535
JOHNSTON WILLIAM DWIGHT
6-1632
JOHNSTONE S T M
6-1259
JOLLY WILLIAM L
6- 809 6-1641
JONES E A
6-1668
JONES EMERSON
6-1339 6-1528
JONES G M D 9
6-1A24
JONES H M
6-1A93
JONES HARDIN B
6- 19 6- 38
JONES LAWRENCE W
6-1538
JONES MERLE EUGENE
6- 123
JONES STANLEY L
6-1138
JONES W H
6-1A56

JORDAN CHARLES B
6- 249
JORDAN W H
6-1511
JORGENSEN THEODORE
6-1339 6-1528
JOYET GUSTAVE
6- 512
JUDD D L
6- 918
JUNG JEAN J
6-1A80
JURNEY E T
6- 980 6-1526
JUZA ROBERT
6-1643 6-1561

KAHAN THEO
6-1292
KAHN HERMAN
6- 952
KAHN J B JR
6-1598
KAHN JACK H
6- 409 6-1499
KAHN M
6-1568
KALLMANN HARTMUT
6-1392 6-1749
KAMEFUCHI S
6- 674 6- 750
KAMEN M D
6- 463
KAMMERER O F
6-1463
KANNER H
6-1905
KAPL STAFF
6- A82
KAPLAN HENRY S
6-1382
KAPLAN LOUIS
6-1176
KAPLON M F
6- 925 6-1489 6-1513
6-1514
KARABINOS J V
6-1430 6-1700
KARDYS C
6-1431
KARP IRA L
6- 687
KARPLUS ROBERT
6- 690
KARUSH W
6-1710
KASHCHENKO L A
6- 772
KASTLER ALFRED
6-1311
KASTNER J
6-1912
KATO TOSIO
6- 719
KATSCHER FRIEDRICH
6-1346
KATSH SEYMOUR
6- 507
KATZ JOSEPH J
6- 125 6- 467
KATZ L
6- 365 6-1871 6-1876
KATZ WALTER
6-1128 6-1129
KATZENSTEIN HENRY S
6- 312
KATZIN LEONARD I
6- 78 6-1428 6-1694
KAUFMAN WARREN J
6- 515
KAUFMANN A R
6-1745
KAWAGUCHI S
6- 167
KEARNS W H
6- 227
KEDZIE CHEMICAL LAB
MICHIGAN STATE COLL
6-1618
KEELER J H
6-1475
KEHL GEORGE L
6-1469 6-1738
KEHOE EDWARD J
6-1394
KEIM C P
6- 285 6-1791
KELLER K K
6-1008
KELLER W D
6-1728
KELLEX CORP
6-1705
KELLEY MYRON T
6-1163 6-1649

KELLOGG H H
6-1173
KELLY W C
6-1919
KELSEY F E
6- 74
KENASTON CAROLYN B
6-1590
KERNS Q A
6- 486 6- 488
KERR PAUL F
6-1221 6-1222 6-1223
6-1224
KERST D W
6-1A61
KERTH LEROY
6- 297
KETCHEN EUGENE E
6-1127 6-1132
KETELLE B H
6- 435 6- 436
KHILKO N I
6- 263
KHODAKOV A L
6- 207
KHODAKOV G N
6- 260
KHOLNOV YU V
6- 421
KHOLODOVSKII G E
6- A71
KHUDYAKOV G N
6- 188
KHYM JOSEPH X
6- 148 6- 843
KICHENASSAWY S
6-1361
KIEFFER R
6-1126
KIKUCHI C
6-1166
KIKUCHI SEISHI
6- 703 6-1861 6-1866
KILE J C JR
6- 45
KILLEEN JOHN
6- 378
KIMBALL R F
6- 46 6- 48 6- 140
6-1108
KING CECIL V
6- 869 6-1468
KING D T
6-1765
KING EDWARD L
6- T9
KING H T
6-1378
KING JOHN GORDON
6-1310
KING L D P
6- 999 6-1852
KING ROBERT U
6- 213 6- 214
KINGERY W D
6- 204 6- 205 6-1448
6-1449
KINGSBURY S A
6- 662
KIP A F
6-1541
KIP ARTHUR F
6-1312
KIRBY H W
6-1432
KIRBY-SMITH J S
6- 27
KIRZHNITS D A
6-1365
KISIELESKI W E
6- 625
KISSINGER CHARLES W
6- 612
KISTLER KATHERINE
6- 12
KIT SAUL
6- 171
KITTEL J HOWARD
6-1741
KIVALO PEKKA
6- 543
KJELDAAS T JR
6-1263
KLECHKOVSKII V M
6- 795
KLEIBER MAX
6- 796
KLEIN ABRAHAM
6- 890
KLEIN G
6- 258
KLEMA E D
6-1535
KLESPER ERNST
6- A28

KLICK C C
6-1510
KLING H P
6- 603
KLINKENBERG P F A
6- 342
KNABLE N
6- 655 6- 670
KNIPP J K
6-1440
KNOLL J E
6- 61
KNOLLS ATOMIC POWER LAB
6- 106 6- 107 6- 252
6- 592 6- 882 6- 951
6-1183 6-1342 6-1436
6-1445 6-1491 6-1630
6-1707 6-1730 6-1780
6-1908
KNOTEK O
6-1126
KNOWLES D J
6-1288
KOCH RUPRECHT
6- 56 6-1783
KOCH WILHELM
6- 63
KOEHLER W C
6-1038 6-1548 6-1729
KOENIG VIRGIL L
6- 30 6- 762
KOESTER LOUIS J JR
6- 966
KOFOED-HANSEN O
6-1837 6-1920
KOHLER UDO
6- 18
KOHN WALTER
6- 727
KOLETSKY SIMON
6- 50
KOLONTSOVA E V
6- 244 6- 247
KORNGOLD LEONHARD
6-1113
KOSKI W S
6- 961 6-1165 6-1509
KOUDIJS B
6- 396
KRAFT L G
6-1751
KRAMER ANDREW W
6-1001
KRAMER I R
6-1742
KRAUS KURT A
6-1669
KRICHEVSKII I R
6- 187
KRIESSMAN C J JR
6-1943
KRINSKY H Y
6-1670
KRISHNAMURTY K V S
6-1147
KRISTJANSON A M
6- 968
KRITCHEVSKY DAVID
6- 852
KROHMER JACK S
6- 304
KROLL NORMAN M
6- 451
KRONBERGER H
6-1185
KRONSTADT R
6-1401
KRUCOFF DARWIN
6-1527
KRUGER H
6- 344
KRUGER P G
6- 966
KRUMBEIN A D
6- 970
KRUMHOLZ LOUIS A
6- 11
KRUSE U E
6-1025
KUDRYAVTZEV E V
6- 873
KUHN H
6- 743
KUIPER G
6-1754
KUNDU D N
6- 705
KURA J G
6-1732
KURENEV V YA
6-1359
KUTATELADZE S S
6- 872
KWAL BERNARD
6- 722 6-1061

KYLES J
6-1557

LABELLE C W
6-1089
LABEYRIE JACQUES
6- 587 6- 566
LABORATORY FOR NUCLEAR SCIENCE AND ENGINEERING MASS INST OF TECH
6- 296 6- 959 6- 407
6- 654 6- 816 6-1393
6-1424 6-1483 6-1533
6-1853
LAFOUCRIERE J
6- 633
LAGARRIGUE A
6-1298
LAITINEN H A
6- 543
LALLEMANT CLAUDE
6- 666
LA MER VICTOR K
6- 609
LAMP BEVERLY
6-1120
LAMPORT JUANITA
6- 35
LANDAU H G
6- 768
LANE I R JR
6-1236
LANE J A
6-1188
LANG A R
6-1291
LANG FRANCES S
6- 889 6-1468
LANG FREDERICK R
6-1106
LANGENDORFF H
6- 53
LANGER LAWRENCE M
6-1914
LANGHAAR HENRY
6-1204
LANGLEY AERONAUTICAL LAB NACA
6- 899
LANGLEY MEMORIAL AERONAUTICAL LAB NACA
6- 865 6-1711
LANKENAU HOSPITAL RESEARCH INST
6- 760 6- 761 6- 792
6- 794
LANSING NEAL F
6-1186 6-1323
LANTER ROBERT J
6-1492
LANZL L H
6-1036
LARK-HOROVITZ KARL
6- 357 6-1949
LARKINS JOHN H
6- 959
LARKINS LOUISE
6- 762
LARKS S D
6- 783
LARSEN EDWIN M
6- 99
LASCOUX JEAN
6- 432
LASLETT L JACKSON
6-1028 6-1531 6-1592
LASSEN N O
6- 394
LAST GEORGE A
6- 890 6- 894
LAUDERDALE H A
6-1610
LAURENT H
6- 845 6-1598
LAVIK PAUL S
6- 659 6-1778
LAWRENCE ERNEST O
6-1834
LAWRENCE J H
6- 497
LAWSON J D
6-1027
LAWSON JAMES
6-1883
LEAR H
6- 329
LEBLANC J J
6- 739
LEBLANC MAURICE
6- 197
LE COUTEUR K J
6-1336
LEE H T
6- 229

LEE HELEN M
6-1447
LEFORT MARC
6- 143 6- 146 6- 877
LEGRAS JEAN
6-1718
LEITH C E
6- 655
LELAND W T
6-1574
LELEVIER R E
6- 321
LEONARDS JACK R
6-1378
LEONTIS T E
6- 903
LEPORE J V
6- 918 6- 975
LEPSIUS RICHARD
6- 685
LEVA MAX
6-1719
LEVER F M
6-1692
LEVEY GERRIT
6-1659
LEVIN DANIEL H
6-1112
LEVINE ROBERT
6- 91
LEVINGER J S
6- 728
LEVINTOV I I
6- 260
LEVITSKAYA M A
6-1053
LEVITT ARNOLD E
6-1143
LEVY F
6- 672
LEVY HARRIS J
6- 414
LEVY HENRI A
6- 482 6- 819
LEVY MAURICE M
6- 747
LEWIS ALVIN E
6- 13 6- 37 6- 765
6-1617
LEWIS FLIGHT PROPULSION LAB NACA
6- 860 6- 866 6- 867
6-1496 6-1712 6-1713
LEWIS G M
6- 307
LEWIS H W
6-1897
LEWIS W B
6- 355
LICHSTEIN HERMAN C
6- 29
LICHTBLAU H
6-1885
LIDDEL URNER
6-1672
LIEBERMAN D S
6- 600 6-1238
LINDEMANN BRUNO
6- 778
LINDENBAUM ARTHUR
6- 77 6-1615 6-1616
LINDER C T
6-1484
LINDSTROM GUNNAR
6- 995
LINEIKIN P S
6- 623
LINGANE JAMES J
6-1138
LIPKIN HARRY J
6- 356
LIPPS F
6- 688
LIPSCOMB WILLIAM N
6- 550
LISTER B A J
6- 844
LITTON F B
6-1241
LIU YU CHENG
6- 170
LIVINGOOD C S
6- 797
LIVINGSTON RALPH
6- 482 6-1308 6-1673
LOCK W O
6- 259 6-1826
LOCKHART HELEN S
6- 654
LOEWE S
6- 141
LOFTNESS R L
6-1734
LOLIGER H
6-1850

LOMONT JOHN S
6- 744
LONCHAMP JEAN-PIERRE
6- 397
LONDON A L
6-1709
LONG ISLAND BIOLOGICAL ASSN COLD SPRING HARBOR
6- 8
LOOMIS F
6-1422
LORENZ EGON
6- 57 6-1082 6-1607
LORIERS JEAN
6-1435 6-1584
LORING B M
6- 596
LORRIS S G
6- 595
LOS ALAMOS SCIENTIFIC LAB
6- 30 6- 191 6- 294
6- 334 6- 505 6- 593
6- 752 6- 805 6- 937
6- 948 6- 949 6- 950
6- 955 6- 959 6- 960
6- 999 6-1206 6-1217
6-1390 6-1462 6-1465
6-1492 6-1503 6-1526
6-1651 6-1682 6-1729
6-1731 6-1773 6-1774
6-1778 6-1789 6-1796
6-1797 6-1799 6-1830
6-1852
LOS J M
6- 154 6- 944
LOUIE BERNIECE JUE
6-1389
LOUISIANA STATE UNIV
6-1635
LOUISVILLE UNIV
6- 851 6-1177 6-1193
LOUVIERE L J
6- 527
LOUWERSE P
6-1275
LOVELL CALVIN H
6-1180
LOVINGTON J A
6- 359
LOW J R JR
6-1730
LOW WILLIAM
6- 340
LOWAN ARNOLD N
6-1714
LOWDERMILK WARREN H
6- 856
LOWDIN PER-OLOV
6-1502
LOWRIE R S
6- 180
LUBARSKY BERNARD
6-1712
LUCKE CHARLES E
6- 489 6- 490
LUCKS C F
6- 915
LUDWIG GUNTHER
6-1370
LUKYANOVICH V M
6- 95
LUMRY RUFUS
6- 498 6- 540
LUNBECK R J
6- 128
LUNDHOLM JOE JR
6- 192
LUNING K G
6- 773
LYMAN E M
6-1039 6-1036 6-1037
LYNCH V H
6- 14 6- 167
LYON RICHARD N
6-1201
LYON THOMAS P
6- 19

MABBOUX CLAUDE
6-1827
MCADAMS GEORGE B
6-1104
MCBEE E T
6- 465
MCCALL D W
6- 351
MCCLURE JOHN HIBBERT
6- 157
MCCONNELL K P
6- 797
MCCUE J J G
6- 359 6- 358 6-1877
MCCUSKER C B A
6- 269 6- 270 6- 613
MCDANIEL B D
6- 479
MCDERMID W L
6- 638 6- 648 6- 649
6- 650 6- 651
MCDIARMID I B
6-1293
MACDONALD N
6- 859
MACDONALD NORMAN S
6- 69 6- 70
MCDUFFIE B
6-1565
MACE W
6-1236
MCELROY W D
6- 6
MCGINNIS CLARE M
6- 816
MCGINNIS WILLIAM J
6-1171
MCGOWAN F K
6-1555
MCGUIRE T R
6-1943
MACHLIN E S
6- 594
MCINDOE W M
6- 112
MACK R A
6-1025
MCKAY KENNETH G
6-1044 6-1045
MACKENZIE K R
6-1901
MCKEWAN WILLIAM
6- 896
MACKEY JAMES
6- 41
MCKINNEY D S
6- 597
MACKLIN R L
6- 354
MCMAHON J B
6- 485
MCMASTER RACHEL D
6- 43
MCMILLAN EDWIN M
6-1835
MCMINN WILLIAM D
6-1010
MCPHERSON D J
6- 591
MCQUILLAN MARION K
6-1259
MCQUITTY J B
6- 945
MCWEENY R
6-1347
MADANSKY LEON
6- 688 6- 689 6-1917
MADDEN ROBERT E
6- 365
MADDIN R
6-1736 6-1742
MADDOCK A G
6-1167
MADEY RICHARD
6- 323
MAEDER D
6- 434 6-1923
MAGAT MICHEL
6- 144 6- 836
MAGEE ROBERT J
6- 825 6- 848
MAGER L
6- 618
MAGES PHILIP S
6- 87
MAIENSCHEIN F C
6- 647
MAIER L C JR
6- 377
MAISIN J
6-1587 6-1588
MAJOR JOHN KEENE
6- 427
MAJOR MARY H
6-1078
MAKAROV E S
6- 249
MALCOLM E D
6- 246
MALIK JOHN STANLEY
6- 380
MALLET LUCIEN
6-1614
MALLETT M W
6- 898
MALLORY H DEAN
6-1664
MALM R E
6- 405
MAMASAKHLISOV V I
6-1334
MANKIEWICZ WANDA
6- 12
MANN A K
6- 706
MANN KINGSLEY M
6-1181
MANN L G
6-1051
MANOWITZ B
6-1552
MARANS N S
6- 130
MARAPODI PETER F E
6-1019
MARCHAL GEORGES
6-1614
MARCUS P M
6-1371 6-1772
MARKAKIS P C
6- 511
MARKOV M A
6-1368
MARMIER P
6- 367 6-1021 6-1022
MARSH J K
6- 842
MARSHAK R E
6- 408 6- 973 6-1819
6-1820
MARSHALL E D
6- 855
MARSHALL J
6-1883
MARSHALL LAWRENCE M
6-1696
MARTENS HOWARD E
6-1231 6-1233 6-1249
MARTIN AARON J
6-1638 6-1784
MARTIN D C
6- 227
MARTIN D W
6- 739
MARTIN DON S JR
6-1504
MARTIN J J
6- 916
MARTIN J ROBERT
6-1406
MARTLAND HARRISON S
6- 787
MARTY CLAUDE
6-1042 6-1306
MASKET A V
6-1319
MASSACHUSETTS INST OF TECH
6- 120 6- 204 6- 205
6- 251 6- 594 6- 595
6- 598 6- 618 6- 676
6-1199 6-1282 6-1433
6-1443 6-1448 6-1449
6-1467 6-1470 6-1471
6-1516 6-1517 6-1518
6-1519 6-1520 6-1745
MASSING WERNER
6- 811
MASTOVSKY OTAKAR
6-1067
MATERIAL LAB NEW YORK NAVAL SHIPYARD
6-1800
MATHESON MAX S
6-1677
MATTHEWS JO CE J
6-1386
MATTHEWS MARION
6-1082
MAXWELL CHARLES R
6-1421
MAXWELL E
6-1748
MAY JOHN E
6-1878
MAYER MARIA JOEPPERT
6-1838 6-1839
MAYKUTH D J
6- 908 6-1732
MEDALIA A I
6- 85 6- 582 6-1182
MEDICAL CLINIC PETER BENT BRIGHAM HOSPITAL
6- 7 6- 9
MEDICAL RESEARCH COUNCIL GREAT BRITAIN
6-1024
MEHL ROBERT F
6- 599
MEINKE W W
6- 916
MEINKE W WAYNE
6-1397 6-1585
MEITES LOUIS
6-1151

MEITES THELMA
6-1151
MEITNER LISE
6-1675
MENEELY JOHN C JR
6- 15
MERTENS ROBERT
6- 395
MESSEL HARRY
6- 269 6- 616 6- 753
METALLOY CORP
6- 166
METALLURGICAL LAB
UNIV OF CHICAGO
6- 732 6-1710
METALLURGICAL LABS
SYLVANIA ELECTRIC
PRODUCTS INC
6- 602 6- 603
METALLURGICAL PROJECT
UNIV OF CHICAGO
6- 731
METALS CORROSION LAB
BUREAU OF MINES
6-1236
METALS RESEARCH LAB
CARNEGIE INST OF TECH
6- 599 6- 601 6-1473
METLAY MAX
6-1469
MEYERHOF W E
6-1051
MICHAELSON HERBERT B
6- 602
MICHEL LOUIS
6-1062
MICHELS A
6-1275
MICHIGAN STATE COLL
6- 529
MICHIGAN UNIV
6- 81 6- 82 6- 83
6- 84 6- 102 6-1207
6-1685
MICROWAVE LAB
STANFORD UNIV
6-1488 6-1545
MIDDLETON R
6- 708
MIKUMO TAKASHI
6-1501
MILHAUD M
6- 524
MILLAR D D
6- 270
MILLARD B
6-1425
MILLEN T S
6- 198
MILLER ARTHUR
6- 660
MILLER C PHILLIP
6- 784 6-1384
MILLER CARL F
6- 560 6- 839 6- 840
MILLER CHARLES E
6- 929
MILLER CHRISTINA C
6- 425 6- 848
MILLER D H
6- 316
MILLER EARL R
6- 67
MILLER G L
6- 913
MILLER H W
6- 105
MILLER HUGH H
6-1163
MILLER J M
6- 380 6- 700
MILLER M M
6-1352
MILLER R R
6-1444
MILLER SCHOOL OF BIOLOGY
UNIV OF VIRGINIA
6- 111
MILLER W T
6- 459 6-1566
MILLIGAN L H
6- 887
MILLIGAN W O
6-1409
MILLINGTON RUTH H
6- 792
MILLS E C
6-1407
MILLS M M
6-1066 6-1722
MILNER C J
6- 584
MINDER W
6-1169
MINISTRY OF SUPPLY
GREAT BRITAIN
6- 756 6- 757 6- 935
MINNESOTA MINING AND
MANUFACTURING CO
6-1701
MINNESOTA UNIV
6- 499 6- 750 6- 891
6-1073 6-1085 6-1503
MIRGALOVSKAYA M S
6- 243
MISCH R D
6- 225
MISKEL JOHN A
6-1015
MISRA B
6- 579
MISSOURI UNIV
6-1486
MITCHEL HERSCHEL K
6- 767
MITCHELL ALLEN C J
6-1909
MITCHELL DAVID W
6- 202
MITCHELL E W J
6-1804
MITOFF STEPHEN P
6- 202
MIZUSHIMA MASATAKA
6-1845
MOBIUS WILFRIED
6-1381
MOCH IRVING JR
6-1738
MOLNAR J P
6- 947
MONAHAN JAMES
6- 954
MONCHICK LOUIS
6-1121
MONDOLFO L F
6- 907
MONK A T
6-1710
MONK C B
6- 100
MONTEFIORE HOSPITAL
NEW YORK
6-1074
MONTILLON G H
6-1863
MOODY N F
6-1495
MOORE GEORGE E
6-1689
MOORE J H
6- 223
MOREL FRANCOIS
6-1622 6-1523
MORELLET DANIEL
6-1827
MORGAN KARL Z
6- 1 6-1095
MORRIS L D
6- 936
MORRISH A H
6-1765
MORRISON A
6-1102
MORRISON D C
6- 92 6- 93
MORRISON J A
6- 154 6- 944
MORRISON P
6-1582
MORTON G A
6- 935
MORTON JOSEPH L
6-1103
MORTON ROY J
6- 54 6-1212
MOSBACH E H
6- 178 6-1520
MOSES M J
6-1374
MOSHINSKY MARCOS
6- 682 6- 683
MOSHMAN J
6-1117
MOTT B W
6-1228
MOTZ HENRY T
6-1530 6-1553
MOTZ J W
6- 998
MOUND LAB
6- 645 6- 960 6-1278
6-1432
MOYER B J
6- 362 6- 788 6- 670
MUEHLHAUSE C O
6-1286
MUENDEL C H
6-1670
MUIRHEAD E G
6-1485
MUIRHEAD H
6- 259 6-1550
MULRYAN B J
6- 21 6- 22
MULVEY J H
6- 391
MUNN JOHN I
6- 494
MURRAY JAMES A
6-1437
MURRAY MARVIN
6- 529
MURRAY RAYMOND L
6- 932
MURTY D S N
6-1150
MUSSER ROBERT J
6-1199
MYERS VERNON
6-1551
NACHTRIEB NORMAN H
6-1395
NAGELSEN MARGARET T
6-1377
NAGY JOHN
6-1627
NAIRN J S
6- 539
NAKAMURA SEITARO
6- 740 6-1356
NAKANISHI MASAKI
6-1403 6-1404
NAKAO AKIRA
6-1387 6-1509
NARBUTT K I
6- 138
NASH R R
6- 888
NASH W F
6- 257
NATAF ROGER
6-1941
NATIONAL ACADEMY OF
SCIENCES
6- 210
NATIONAL BUREAU OF
STANDARDS
6- 295 6- 888 6- 998
6-1279 6-1429 6-1430
6-1497 6-1700 6-1715
6-1748
NATIONAL CANCER INST
6-1082
NATIONAL PHYSICAL LAB
GREAT BRITAIN
6- 675
NATIONAL RESEARCH CORP
6- 223
NATIONAL RESEARCH
COUNCIL OF CANADA
6- 864 6-1536 6-1537
NATIONAL RESEARCH
COUNCIL OF CANADA DIV
OF BUILDING RESEARCH
6-1416
NAUGLE J E
6-1266
NAVAL ENGINEERING
EXPERIMENT STATION
ANNAPOLIS
6- 182 6- 203
NAVAL MEDICAL RESEARCH
INSTITUTE BETHESDA
6- 494 6- 527 6-1097
6-1376
NAVAL MEDICAL RESEARCH
STATION JOINT TASK
FORCE ONE
6- 32
NAVAL ORDNANCE LAB
6-1714
NAVAL RADIOLOGICAL
DEFENSE LAB
6- 23 6-1593 6-1594
NAVAL RESEARCH LAB
6- 89 6- 232 6- 596
6- 885 6- 946 6-1218
6-1237 6-1510
NAVAL RESEARCH LAB
UNIV OF WISCONSIN
6- 286
NAVAL SCHOOL OF AVIATION
MEDICINE PENSACOLA
6-1596
NEBRASKA UNIV
6-1339
NEEB H CHR
6- 217 6- 218
NELSON C O
6-1630
NELSON D B
6-1630

NELSON H R
6- 496
NELSON JAMES A
6-1216
NELSON N Z
6- 433
NELSON R A
6- 389
NEMTSOVA V V
6- 95
NEPA DIV
6- 578 6- 646 6- 647
6- 900 6- 901
NEPA DIV FAIRCHILD ENGINE AND AIRPLANE CORP
6-1316 6-1447 6-1465
NERVIK W E
6-1344
NESBITT JOHN B
6- 515
NESBITT L B
6- 993
NESLAND A
6-1398
NEUFELD J
6- 34
NEUMAN W F
6- 21 6- 22
NEVILLE O KENTON
6-1122
NEVIN T E
6- 613
NEW BRUNSWICK LAB
6-1656 6-1657
NEW MEXICO UNIV
6-1206 6-1783
NEW YORK OPERATIONS OFFICE AEC
6- 211 6- 528 6-1394
NEW YORK UNIV
6- 653 6- 677 6- 849
6-1392 6-1465 6-1597
6-1749 6-1840
NEWCOMBE R A
6- 849
NEWELL JOHN F
6- 858
NEWMAN JAMES R
6-1069
NEWNHAM I E
6-1175
NEWNS H C
6-1888
NEWTON GENE B
6- 629
NEWTON J O
6- 352
NEWTON J W
6- 71
NEWTON T W
6-1682
NICHOLS J L
6-1658
NICHOLS O
6-1606
NIEF G
6- 291
NIELSEN RICHARD L
6- 914
NIER A O C
6- 462
NIER ALFRED O
6- 991 6-1793
NIJGH G J
6- 420 6- 422
NIKOLSKII S I
6- 261
NOGGLE G R
6- 3 6- 101 6-1592
NORDHEIM GERTRUD P
6-1769
NORDMAN CHRISTER E
6- 550
NORMAN BRIDGE LAB OF PHYSICS CALIF INST OF TECH
6- 444 6- 446
NORMAND C E
6- 285
NORRIS T H
6-1626
NORRIS WILLIAM P
6- 28 6-1135
NORTH AMERICAN AVIATION INC
6- 115 6- 815 6-1137
6-1152 6-1197 6-1322
6-1721 6-1734
NORTH CAROLINA STATE COLL
6-1194 6-1446
NORTH CAROLINA UNIV
6-1219
NORTHWESTERN UNIV
6- 644
NORTON F H
6- 204 6- 205 6-1445
6-1449
NORTON G A
6- 407
NORTON JOHN T
6- 120
NOTRE DAME UNIV
6-1676
NOVEY T B
6-1047
NOVOBATZKY K F
6-1938
NOVOSILTSEV N S
6- 207
NOWATNY H
6-1126
NOYCE W K
6- 471 6- 472
NUCLEAR DEVELOPMENT ASSOCIATES INC
6- 384 6-1285
NUCLEAR PHYSICS LAB CALIF INST OF TECH
6- 382 6-1543
NUSSBAUM RALPH E
6- 69 6- 70 6- 135
NUSSBAUM R H
6- 420
NYSTROM ROBERT F
6-1181

OAK RIDGE INST OF NUCLEAR STUDIES
6-1186
OAK RIDGE NATIONAL LAB
6- 1 6- 2 6- 3
6- 4 6- 5 6- 24
6- 25 6- 26 6- 27
6- 29 6- 34 6- 45
6- 46 6- 47 6- 48
6- 49 6- 101 6- 111
6- 140 6- 148 6- 149
6- 150 6- 152 6- 160
6- 185 6- 192 6- 277
6- 293 6- 330 6- 409
6- 441 6- 533 6- 577
6- 643 6- 781 6- 843
6-1070 6-1071 6-1075
6-1077 6-1078 6-1079
6-1080 6-1092 6-1093
6-1094 6-1095 6-1109
6-1110 6-1111 6-1116
6-1134 6-1163 6-1172
6-1186 6-1188 6-1189
6-1190 6-1192 6-1201
6-1212 6-1213 6-1261
6-1288 6-1320 6-1323
6-1350 6-1482 6-1485
6-1499 6-1511 6-1515
6-1548 6-1549 6-1555
6-1561 6-1591 6-1592
6-1598 6-1599 6-1610
6-1612 6-1625 6-1648
6-1649 6-1697 6-1729
6-1777 6-1856
OAK RIDGE NATIONAL LAB Y-12 AREA
6- 272 6- 285 6- 694
6- 695 6- 869 6- 870
6- 952 6- 953 6-1000
6-1791 6-1882
OBERSTE-LEHN HARALD
6- 64
ODELL FRANCIS
6- 209
OFFICE OF NAVAL RESEARCH LONDON
6- 448 6-1371 6-1372
6-1522 6-1523
OGDEN H R
6- 908 6-1732
OGIEVETSKII V I
6-1041
OGLE W E
6-1799
OLD AND BARNES INC
6- 403
OLIVER A J
6- 298
OLIVER GEORGE D
6-1158 6-1159
ONODA KIYOKO
6-1453
ONSTOTT E I
6-1651
OPECHOWSKI W
6- 350
OPINSKY A J
6-1154 6-1155
OPP KARL
6-1643 6-1661
OPPENHEIM ALAN
6- 384
ORCEL JEAN
6-1461
OREAR JAY
6-1754 6-1793 6-1818
6-1819 6-1833 6-1839
6-1859 6-1860 6-1861
6-1883 6-1887 6-1909
6-1931
OREGON STATE COLL
6-1626 6-1650
OREGON UNIV
6- 59 6-1450
ORKIN-LECOURTOIS AGNES
6-1827
ORTEL
6- 880
ORTH DONALD
6- 736
OSBORN PAUL V
6-1443
OSIPOV K A
6- 909
OSTLING GUSTAF
6-1105
OUELLET C
6- 531
OVERSTREET R
6-1422
OWEN LOUIS E
6-1145

PAASCHE O J
6-1229
PACE E L
6- 868
PACKARD M E
6-1671
PAEHLER J H
6-1856
PAGE WILLIAM R
6-1199
PALMER PHYSICAL LAB PRINCETON UNIV
6-1305 6-1794 6-1801
6-1911
PANOFSKY H A
6- 677
PANOFSKY WOLFGANG K H
6- 317 6- 362 6- 476
PAPP C A
6- 898
PARIS RENE
6-1141
PARKER E R
6-1733
PARKER J R
6- 638 6- 648 6- 649
6- 650 6- 651 6- 652
PARLIN RANSOM B
6- 620 6-1537
PARNANEN P O
6- 775
PARSEGIAN V L
6-1705
PARTRIDGE WILLIAM S
6- 620
PARVIAINEN S
6- 775
PARZEN G
6- 933
PASCAUD CLAUDE
6- 607
PASK JOSEPH A
6- 201 6- 202
PASKIN ARTHUR
6-1858
PATERSON EDITH
6-1386
PAUL M
6-1860
PAYNE P R
6-1088
PEACOCK J M
6- 564
PEARCEY T
6- 939 6- 940
PEARLSON W H
6-1701
PEARSON HAROLD E
6- 72
PEARSON W B
6-1476
PEEBLES P N
6-1440 6-1441
PEEK HARRY MILTON
6-1773
PEELLE R W
6-1801
PEIERLS R E
6-1754 6-1850
PEIRSON D H
6- 590

PELLAS PAUL
6-1225
PENNER S S
6-1438
PENNSYLVANIA STATE COLL
6- 200 6- 234 6- 538
6- 806 6- 807 6- 808
6-1631 6-1633 6-1674
6-1638 6-1650 6-1640
6-1784
PENNSYLVANIA STATE COLL
SCHOOL OF MINERAL
INDUSTRIES
6- 116 6- 117 6- 118
6- 119
PEPKOWITZ L P
6- 106 6- 107 6- 592
PEPPER T P
6-1486
PERFETTI BRUNO H
6- 91
PERKINS D H
6- 259
PERLMAN I
6- 413 6- 414 6- 415
PERLMAN M L
6-1792
PERLOW GILBERT J
6- 612
PERMINGEAT FRANCOIS
6-1460
PERNEGR J
6-1267 6-1297
PERRINGS J D
6- 30 6- 762
PERRY ALFRED MORRIS JR
6-1534 6-1546
PERSIANI PAUL J
6- 958
PERSICO ENRICO
6- 749
PETERMANN A
6- 458
PETERMANN MARY L
6-1074
PETERS B
6- 925
PETERS HORST
6-1683
PETERSON DOROTHY C
6-1421
PETERSON S W
6- 619
PETIAU GERARD
6- 752 6-1733 6-1563
PETRETIC G J
6-1657
PETRIE D P R
6-1026
PETSCHEK A G
6- 408
PEYROU C
6-1298
PHAIR GEORGE
6-1453
PHARES E F
6- 178 6- 532 6-1620
PHELPS ARTHUR V
6-1490
PHILLIPS G
6- 576
PHILLIPS J A
6- 955
PHILLIPS K
6-1539 6-1808
PHILLIPS MICHAEL D
6-1377
PHILLIPS R
6- 362
PIATIER H
6-1156
PICARD E
6-1265
PICCIRILLO RONALD T
6- 36
PICHAT L
6-1698
PICKAVANCE T G
6-1483 6-1687
PICKLE C B
6-1777
PICKUP E
6-1761 6-1807
PIERCE FRANK T
6- 38
PIETRUCK CHRISTEL
6- 846 6- 847
PIGG J C
6-1281 6-1349
PIKE R
6-1429
PILZ W
6-1402
PITTSBURGH UNIV
6- 91 6- 235 6-1472
6-1632 6-1554
PLACAK OLIVER R
6- 54
PLAN MAX
6-1717
PLUCKNETT WM S
6- 275
PLUNKETT R L
6- 403
PLUVINAGE P
6-1063
POCHAPSKY T E
6- 580
POEL L W
6-1703
POLLOCK FRANKLIN
6- 451
POMERANCHUK I YA
6- 326
POMERAT C M
6- 797
POMPER SEYMOUR
6-1591
POND T A
6-1305
POOL M L
6- 705
PORTER PAUL EDWARD
6- 558 6- 562 6- 563
PORTER PHILIP K
6- 476
POSS H L
6-1525
POTTER DAVID S
6- 929
POTTER E V
6- 862
POULSON D F
6-1114
POWELL A R
6-1692
POWELL C F
6-1328 6-1720
POWELL J E
6- 561 6-1590
POWELL W M
6- 478
POWER E A
6-1301
PRANATIS A
6- 601
PRAY M A
6- 273
PRAYTOR E H
6- 31
PREISER STANLEY
6- 384
PREISWERK P
6- 419 6- 434 6-1876
6-1923
PRESBYTERIAN HOSPITAL
CHICAGO
6- 565
PRESCOTT C H JR
6- 466
PRESCOTT J R
6-1915
PRESENT R D
6-1840
PRESSMAN DAVID
6-1113
PRESTON M A
6-1554
PRESTON W M
6- 359 6- 368 6-1877
PRICE ROBERT
6-1781
PRIEDIGKEIT J
6-1575
PRIMAK W
6-1260
PRINCETON UNIV
6- 90 6- 447 6-1166
6-1400 6-1455
PRINGLE R W
6-1916
PRINGSHEIM PETER
6-1427
PRITCHARD F W
6- 475
PROCTOR B E
6- 511
PROCTOR W G
6-1018 6-1895
PROSSER H C
6-1792
PRUETT C H
6-1352
PRUGNE PIERRE
6-1725
PRZIBRAM KARL
6- 142
PUERTO RICO UNIV
6- 610
PURDUE UNIV
6-1840
PURSEY D L
6- 366

QUERIDO A
6- 523
QUILL LAURENCE L
6-1174
QUINTON A
6-1332
QUIRK J F
6- 484

RABBITT JOHN C
6-1454 6-1455
RABINOVITCH B S
6- 828
RABINOWITZ J
6- 174
RACAH GIULIO
6- 990
RACHINSKII V V
6-1621
RADIATION LAB
UNIV OF CALIF
6- 14 6- 34 6- 92
6- 93 6- 123 6- 152
6- 153 6- 167 6- 168
6- 254 6- 278 6- 284
6- 289 6- 297 6- 298
6- 299 6- 317 6- 318
6- 319 6- 320 6- 321
6- 322 6- 323 6- 324
6- 357 6- 361 6- 362
6- 363 6- 364 6- 378
6- 379 6- 386 6- 387
6- 388 6- 389 6- 390
6- 410 6- 411 6- 412
6- 413 6- 414 6- 415
6- 416 6- 495 6- 496
6- 497 6- 521 6- 531
6- 620 6- 655 6- 656
6- 669 6- 670 6- 671
6- 686 6- 687 6- 701
6- 702 6- 703 6- 715
6- 716 6- 717 6- 718
6- 736 6- 737 6- 809
6- 417 6- 818 6- 831
6- 832 6- 850 6- 852
6- 854 6- 861 6- 917
6- 918 6- 941 6- 962
6- 963 6- 974 6- 975
6-1004 6-1005 6-1006
6-1030 6-1324 6-1326
6-1344 6-1780 6-1491
6-1512 6-1538 6-1556
6-1641 6-1703 6-1753
6-1790 6-1821 6-1874
6-1835 6-1841 6-1862
6-1863 6-1864 6-1865
6-1866 6-1927
RADIO CORP OF AMERICA
6- 638
RADIOPHYSICS LAB
UNIV GROUNDS SYDNEY
AUSTRALIA
6- 939 6- 940
RADISHCHEV V P
6- 96
RADUSHKEVICH L V
6- 95
RAE E R
6- 440
RAFELSON MAX E JR
6- 72
RAIEVSKI V
6- 697
RAINWATER JAMES
6- 976
RAINWATER L J
6- 984
RALL WALDO
6-1478
RAMSEY N F
6-1025
RAMSEY NORMAN F
6- 336 6-1572 6-1828
RAMSEY W E
6- 310
RAMSKILL EUGENE A
6- 517
RAND CORP
6-1589 6-1709
RANDLE T C
6- 376
RANKIN BAYARD
6- 378
RANZ W E
6-1708

RAO BH S V RAGHAVA
6- 113 6- 823 6-1146
6-1147 6-1148 6-1150
RAO C LAKSHMAN
6- 113 6-1148
RAPOPORT HENRY
6-1180
RAPOPORT L P
6-1053
RAPP KARL E
6-1160
RAPPOPORT I D
6- 261
RASMUSSEN JOHN OSCAR JR
6- 363 6- 410 6- 412
6-1556
RASMUSSEN R T C
6-1727
RASMUSSEN V K
6-1010
RATIER J
6- 977
RAUMANN GERTRUD
6-1775 6-1776
RAVENHALL D J
6-1A25
RAVERY MICHAEL
6-1240
RAY W E
6- 234
RAYSKI J
6- 751
RCA LABS DIV RADIO
CORP OF AMERICA
6- 935
RCA VICTOR DIV
RADIO CORP OF AMERICA
6- 648 6- 649 6- 650
6- 651 6- 652
READ H J
6- 234
READ T A
6- 600 6-1238
REDDEN THOMAS
6- 238
REED S K
6-1566
REGENSTREIF EDOUARD
6- 283
REID A F
6-1584
REID A T
6- 768
REID GEORGE W
6- 789
REID T R
6- 57
REIFENSTEIN ROBERT W
6- 9
REIFFEL L
6- 665 6-1810 6-1811
REILLEY CHARLES N
6- 574
REINDERS M E
6- A22
REINES F
6-1A40
REINHART FRED M
6- A88 6-1735
REINSCH A J
6- A26
REISNER J H
6- 638 6- 648 6- 651
REMLEY M E
6- 966
RENGSTORFF G W P
6-1740
RENNER WILLIE
6- 55
RENSSELAER POLYTECHNIC
INST
6- A88
RESEARCH AND DEVELOPMENT
BOARD DEPT OF DEFENSE
6- 237
RESEARCH LAB OF
ELECTRONICS
MASS INST OF TECH
6- 253 6- 377 6- 548
6- 713 6-1490 6-1521
6-1541 6-1750 6-1751
6-1768 6-1770 6-1781
REST F G
6-1A11
REYNOLDS C A
6- 920 6- 993
REYNOLDS DEXTER H
6-1206
REYNOLDS F L
6-1580
REYNOLDS FRED L
6- 415
REYNOLDS P
6-1A67

RHODES BONNIE
6-1617
RIBE FRED L
6-1A99
RICAMO R
6-1017 6-1023
RICARD RAYMOND
6- 160
RICH T A
6-1581
RICHARDS ARCHER W
6-1724
RICHARDS H T
6-1A59
RICHARDS P I
6-1283
RICHINGS H
6-1910
RICHMAN CHAIM
6- 669
RICHTER ESTHER
6- 508
RIDDIFORD L
6- 586 6- 714 6-1209
RIEGEL BYRON
6- 170
RIFKIN HAROLD
6-1074
RILEY HERBERT PARKES
6- 24 6- 26
RILEY RICHARD F
6- 508 6-1500
RINGO G R
6- 381 6- 579 6-1903
RITSON D M
6- 925 6-1489 6-1513
ROBB W L
6- A01
ROBERSON A H
6-1229
ROBERTS J E
6- 686
ROBERTS J H
6- 644
ROBERTS JOHN D
6- A16
ROBERTS L D
6-1485 6-1561
ROBERTSON K L
6-1499
ROBINSON BEROL L
6- 689 6-1917
ROBINSON F N H
6- 997
ROBINSON RADCLIFF F
6-1377
ROBINSON REX J
6-1149
ROBINSON ROBERT R
6- 796
ROBSON J M
6-1909
ROCHESTER UNIV
6- 337 6- 338 6- 385
6- 408 6- 925 6- 973
6-1029 6-1489 6-1513
6-1514 6-1534 6-1546
6-1547 6-1620
RODERICK H
6-1051
RODGER WALTON A
6- 518
RODICHEV V I
6-1366
ROESLER FRANK C
6-1205
ROGERS BETTY S
6-1390
ROGERS F T JR
6- 280
ROGERS HOWARD H
6-1133
ROGERS L B
6-1777
ROGERS MAX T
6- 125
ROGERS R R
6-1251
ROGERS R W
6- 293
ROGOZINSKI ANATOLE
6-1265 6-1345
ROHSENOW WARREN M
6-1443
ROLFENSTEIN ROBERT W
6- 7
ROLLIN B V
6- 255
ROMAN P
6- 333
ROMAND JACQUES
6- 879
ROMANN PAUL
6- A81

ROOT ROBERT E
6- 528
ROPP GUS A
6-1122
ROSE D C
6- 930
ROSE HORACE E
6- 919
ROSE J W
6- 701 6- 702
ROSE M E
6- 339 6-1844 6-1846
ROSEN L
6-1503
ROSENBLUM E S
6-1543
ROSENBLUM IRA
6-1104
ROSENBLUM SALOMON
6-1A46
ROSENFELD A H
6-1754 6-1793 6-1818
6-1A19 6-1833 6-1879
6-1A59 6-1880 6-1881
6-1A83 6-1887 6-1909
6-1931
ROSENTHAL ISADORE
6- 538 6-1539
ROSI F D
6- 603
ROSS M
6- 335
ROSS MARY H
6-1599 6-1612
ROSSEL J
6- 302
ROSWIT BERNARD
6- 68
ROTBLAT J
6-1328 6-1329 6-1330
6-1A59 6-1869
ROTH E
6- 547
ROTHMAN ALAN
6- 597
ROTHWELL P
6- 393
ROUGEOT LOUIS
6-1292
ROUNDS DONALD E
6- 69 6- 70
ROWELL JOHN B
6- 499 6- 759 6-1073
6-1085
ROZENTAL I L
6-1270
RUBERT K F
6-1711
RUBIN B A
6-1086
RUBIN T
6- A69
RUBINSON A C
6-1114
RUCHHOFT C C
6- 519
RUDDY JOHN M
6-1373
RUDERMAN M
6- 318 6- 918
RUDMAN P S
6- 598 6-1467
RUDSTAM G
6-1A62
RUGH ROBERTS
6-1604
RULFS CHARLES L
6-1397
RULON RICHARD M
6-1480
RUNNER MERVIN E
6- 552
RUSAKOVA LUKOVSKAYA N V
6- 244
RUSSELL LIANE BRAUCH
6- 45 6-1078
RUSSELL W L
6- 45 6-1078
RUSTAD B M
6- 286
RUTHERGLEN J G
6- 440
RUTLEDGE W C
6-1046 6-1907
RYTZ ALBRECHT
6- 438

SACHER GEORGE A
6- 784
SACHS FRANCES L
6- 110 6- 449 6- 909
SACHS R G
6- 335 6-1013

SACKS JACOB
6-1399
SAGANE R
6- 372 6- 373
SAGE B H
6-1164
SAHIAR A B
6- 978
ST CLAIR H W
6- 862
ST LOUIS UNIV
6- 954
SAKAKURA A Y
6-1459
SALAM ABDUS
6- 746
SALANT E O
6-1525
SALERNO PAUL R
6- 33
SALIKHOV S G
6-1359
SALISBURY W W
6-1324
SALPETER E E
6-1754 6-1936 6-1937
SALSBURG ZEVI W
6-1773
SALTER WILLIAM T
6-1104
SALUNINA A E
6- 206
SALUTSKY MURRELL L
6-1174
SALVETTI C
6-1934
SAMPSON M B
6-1010 6-1011
SAMS ELDON W
6- 867
SANDS M L
6-1578
SANGREN WARD
6-1111
SARD ROBERT D
6-1759
SARGENT B W
6-1431 6-1854
SARROUY JEAN-LOUIS
6- 636
SASMOR D J
6- 868
SASTRI M L N
6-1929
SATO TAKUYA R
6-1135
SATTERTHWAITE C B
6-1472
SAUREFABRIK
SCHWEIZERHALL
SWITZERLAND
6-1944
SAWKILL J
6-1743
SAWYER B
6- 601
SAWYER GEORGE ALANSON
6- 369 6- 955
SCADRON MARVIN D
6-1713
SCARBOROUGH JAMES M
6- 275
SCATCHARD G
6-1471
SCHAEFER O
6- 853
SCHAEFER HERMANN J
6-1596
SCHAFER HARALD
6- 846 6- 847
SCHARDT A W
6-1507
SCHEER KURT ERNST
6-1107
SCHEIN MARCEL
6- 267
SCHELBERG A D
6-1565
SCHERER M
6-1296
SCHERRER P
6-1021 6-1022
SCHIESSLER ROBERT W
6- 122
SCHIFF DAPHNE
6- 864
SCHIFF L I
6-1488 6-1545 6-1819
SCHJEIDE OLE ARNE
6- 36
SCHLAFER HANS LUDWIG
6-1645 6-1647
SCHLAIN D
6-1236
SCHLENCK HERMANN
6-1120
SCHLENK F
6- 812 6-1072
SCHLIVITCH SRETEN
6- 301
SCHLUTER R A
6-1754 6-1793 6-1818
6-1819 6-1833 6-1839
6-1859 6-1860 6-1861
6-1863 6-1887 6-1909
6-1931
SCHMID H
6- 570
SCHMID K
6- 570
SCHMIDT GERHARD
6- 52
SCHNEIDER E E
6- 834
SCHNEIDER H
6-1925
SCHNEIDER W
6- 66
SCHOMAKER VERNER
6- 136 6- 554
SCHRADER ALAN R
6- 203
SCHRODINGER ERWIN
6- 815
SCHUBERT CLARENCE C
6-1674
SCHUBERT JACK
6- 76 6- 77 6-1615
6-1616
SCHUCK EDWARD A
6- 13 6- 37 6- 765
SCHULER ROBERT H
6-1674
SCHULMAN J H
6-1510
SCHULZ ALVIN G
6- 324 6- 871
SCHUMB WALTER C
6-1133
SCHWARTZ DREW
6- 2
SCHWARTZ J W
6-1549
SCHWARTZ M A
6- 578
SCHWARZ-BERGKAMPF ERICH
6- 874
SCHWEBEL A
6-1430
SCHWEICKERT C E
6- 273
SCHWEMIN A J
6- 861
SCHWETZOFF VLADIMIR
6- 479
SCHWINGER JULIAN
6- 690
SCOTT E J
6- 800
SCOTT F R
6-1050
SCOTT JAMES K
6- 528
SCOTT K G
6-1422
SCOTT M B
6-1035 6-1036 6-1037
SCOTT WILLIAM T
6- 383
SCULLY NORBERT J
6- 163
SEABORG GLENN T
6- 284 6- 416
SEAGRAVE JOHN D
6-1479
SEAY W A
6- 965
SEDGWICK LABS OF
SANITARY SCIENCE
MASS INST OF TECH
6- 515
SEGRE E
6- 474 6-1887
SEIFERT H S
6-1066
SEIGLE L L
6- 598
SEKI S LOUISE
6-1084
SELDAM C A TEN
6- 128
SELKE W A
6-1431 6-1670
SELLE W A
6-1380
SEMMEL J W
6- 600
SEMMENS R D
6- 181
SENFTLEBEN HERMANN
6-1202
SEPTIER ALBERT
6-1642
SERBER ROBERT
6-1816 6-1819
SERIN B
6- 920 6- 993
SERVOMECHANISMS LAB
MASS INST OF TECH
6- 296 6- 407
SETLOW R B
6-1802
SEWELL CURTIS JR
6-1779
SEXL THEODOR
6-1043
SEYMOUR E F W
6- 255
SHACTER BERNARD
6-1593 6-1594
SHAMOS M H
6-1758
SHANMUGADHASAN S
6-1933
SHAPIRO ANATOLE M
6-1823
SHAPIRO I S
6- 983
SHARP D E
6-1419
SHARP M
6- 230
SHARP W N
6- 589
SHARPE J
6- 956
SHAW D F
6- 723
SHAW J C
6- 527
SHCHERBAKOV D I
6- 216
SHEEHAN J P
6- 902
SHEEHAN WILLIAM F JR
6- 554
SHELINE GLENN E
6- 67
SHELINE R K
6-1419 6-1674
SHELTON EMMA
6- 57
SHEPPARD C W
6-1077 6-1111
SHER R
6- 706
SHERBY OLEG D
6- 231 6-1235
SHERMAN BELLA
6-1113
SHERMAN D F
6- 322
SHERMAN NOAH
6-1756
SHERR R
6-1911
SHERRY E V
6-1431
SHERWIN CHALMERS W
6-1909
SHERWOOD A M
6- 764
SHEWCHUCK SERGEY
6- 917 6- 952 6- 963
6-1005 6-1006 6-1324
6-1481 6-1512 6-1753
6-1834
SHIRLEY E L
6- 107
SHIROKOV YU M
6- 457
SHOEMAKER F C
6-1794
SHONKA F R
6-1506
SHOOLERY J N
6- 554
SHORTER GERTRUDE
6- 784
SHPINEL V S
6- 742
SHULL C G
6-1038 6-1548
SHULL HARRISON
6- 256
SHULMAN R G
6- 554
SHUTT R P
6- 315 6- 316 6-1817
SIBERT MERLE E
6- 236 6-1737
SIEFFERT L E
6- 126

SIEGBAHN K
6-1A39
SIEGEL R
6-1771
SILSBEE H B
6- 255
SILVERMAN A
6-1A72
SILVERMAN L
6- A15 6-1137
SILVERMAN SOL R
6-1452 6-1744
SIMMEL E B
6- 61
SIMON A
6-1A46
SIMON ROBERT H
6-1436
SIMONS J C
6- 253
SIMONTON JOHN
6- 19
SINCLAIR W K
6- 525
SINDEBAND S J
6- 120
SINEX F MAROTT
6-1652
SINGER I A
6- 677
SINGER JOSEPH
6-1729
SINGER S FRED
6-1522
SISLER HARRY H
6- 208
SJOSTRAND FRITIOF
6- 766
SKAPERDAS GEORGE T
6-1720
SKOK JOHN
6- 163
SKYRME D M
6- 370
SKYRME T H R
6-1003
SLATER J C
6- 253 6- 377 6- 713
6- 733 6-1541
SLICHTER C P
6- 351
SLIV L A
6-1064
SLOAN-KETTERING
INSTITUTE FOR CANCER
RESEARCH
6- 566 6-1074 6-1112
6-1113
SMALLER B
6-1798
SMELLIE R H S
6- 112
SMITH ARTHUR H
6- 796
SMITH COLL
6- 383
SMITH F M
6- 320
SMITH H S
6-1129
SMITH J E
6- 642
SMITH L A
6-1012 6-1154
SMITH LINCOLN G
6- 626
SMITH LUTHER
6- 32
SMITH MAYNARD E
6- 780
SMITH PHILIP BARTLETT
6- 349
SMITH R D
6- 440
SMITH RAYMOND L
6- A12 6-1072
SMITH WARREN H
6-1531 6-1532
SMOLUCHOWSKI R
6- 601 6-1153 6-1154
6-1155 6-1473 6-1660
SMULLIN L D
6-1770
SMYTH CHARLES P
6- 131
SNELL ARTHUR H
6-1261 6-1859
SNOW A I
6- 276
SNOW GEORGE A
6-1340 6-1525
SNOWDON S C
6-1795
SNYDER C W
6-1535
SNYDER HARTLAND S
6- 292
SNYDER W S
6- 34
SOBCZYK ANDREW
6- 948 6- 949 6- 950
6-1796
SOMMER L H
6- 130
SOMMERS HENRY S
6-1A30
SOMNA EDWARD H
6-1443
SONDHEIMER E H
6-1772
SORRENTINO JOSEPH
6- 68
SOWDEN JOHN C
6- 172
SPAIN PATRICIA
6- 69 6- 70
SPALDING CHARLES K
6- 779
SPARGO B
6-1606
SPECTROSCOPIC LAB
UNIV OF CHICAGO
6-1302
SPEDDING F H
6- 558 6- 559 6- 560
6- 561 6- 562 6- 563
6- 839 6- 840 6-1171
6-1464 6-1590
SPENDLOVE M J
6- 862
SPERRY P R
6-1245
SPICER B M
6-1A85
SPIESS FRED NOEL
6- 411
SPIGHEL MAURICE
6-1348
SPIKES JOHN D
6- 498 6- 534 6- 540
6- 567
SPINKS J W T
6- 958
SPIRO HOWARD M
6- 7
SPIRTES MORRIS A
6- 760 6- 761
SPOERL EDWARD
6- 771
SPONER H
6-1695 6-1769
STAHELIN P
6- 419 6-1836
STAHL ADRIAN
6-1273
STAIR W K
6- 577
STAKMAN E C
6- 759 6-1085
STANDIL S
6-1916
STANDING K G
6-1A01
STANG L G JR
6- 406
STANLEY ALFRED R
6- 183
STAPLETON GEORGE E
6- 47 6- 49 6-1079
STARK M J
6- 126
STAUB H H
6-1A50 6-1884
STAVELY HOMER E
6- 183
STEAD F W
6- 589
STEADMAN LUVILLE T
6- 528 6-1089
STECKELMACHER W
6- 582
STEEL W H
6- 630
STEELE ROBERT
6-1115
STEENBERG N R
6-1A42
STEENLAND M J
6- 921
STEFFENS KARL
6- 55
STEIN GABRIEL
6- A35
STEINBERG E P
6-1327
STEINBERG MORRIS A
6- 236 6-1737
STEINBERGER J M
6- 328 6- 329
STEINBERGER JACK
6- 317
STEINHAUSER OTTMAR
6- A24
STELLER JACK
6- 317
STEPHAN E F
6- 273
STEPHAN H R
6- 901
STEPHEN R
6- 324
STEPHENSON RICHARD
6- 441
STEPKA W
6- 167
STERN KURT H
6- 84
STERN MARTIN O
6- 717
STEUBER WALTER
6- 424
STEUDEL ANDREAS
6- 693
STEVENS B P
6- 798
STEVENSON DONALD T
6-1A43
STEVENSON P C
6-1344 6-1862
STIER PAUL
6-1549
STODDARD A E
6- 739
STOKES RICHARD H
6-1028
STOKINGER HERBERT E
6- 528 6-1089
STOKLAND K
6- 217 6- 218
STONE C A
6- 665 6-1810 6-1811
STOREY R H
6- 25 6-1117
STOUGHTON R W
6-1625
STOVALL E J JR
6- 955
STRAIN HAROLD H
6-1135
STRANDBERG M W P
6- 548 6-1521
STRASSMAN MURRAY
6- 794
STRAUB CONRAD P
6- 54
STREET J C
6-1760
STREET K JR
6- 357
STREHLER BERNARD L
6-1134 6-1601
STRICK ELLIS
6- 348 6-1418
STRIPEIKA ALEX J
6- 629
STROMNAES DISTEIN
6- 770
STROMQUIST W K
6- 186
STROUD CATHERINE A
6- 528
STUECKELBERG E C G
6- 458
STURCKEN EDWARD F
6- 954
STURDY G E
6- A05
STURM WILLIAM J
6- 985
STUTZ R E
6- 164
STYRIKOVICH M A
6- 871
SUDDATH J C
6-1092
SUESS H E
6-1754
SUGARMAN N
6- 475 6-1860
SUITS C J
6-1317
SULLY A H
6-1246
SUMMERS-SMITH D
6-1256
SUPPLEE HELEN
6-1593 6-1594
SURDIN M
6-1265 6-1787 6-1788
SUTCLIFFE T
6- 134
SUTTON J
6- 196

SUZOR FRANCIS
6-1355
SVEC HARRY J
6- 276 6- 573 6-1226
SVERDLOV L M
6- 137
SVIHLA G
6- 625
SWAIN A J
6-1257
SWAN G A
6- 169
SWANSON C P
6- 6
SWANSON DON R
6- 387
SWANSON MARJORIE A
6- 799
SWARTOUT J A
6-1320
SWARTZ C E
6-1466
SWENSSON J W
6- 161
SYLVANIA ELECTRIC PRODUCTS INC
6-1474
SYLVESTER G E
6-1089
SYRACUSE UNIV
6- 924
SZASZ GEORGE J
6- 448

TABER KENNETH W
6- 58
TAHMISIAN T N
6- 302
TAI C T
6- 708
TAIEB JOSEPH
6- 835
TAKAHASHI Y
6- 674 6- 750
TAKEBE HISAO
6-1356
TAKETANI MITUO
6- 738 6- 740
TALBOYS ALBERT P
6- 883
TALIAFERRO L G
6-1375
TALIAFERRO W H
6-1375
TANG CHING-SIANG
6- 807 6-1639 6-1640
TANNENWALD P
6-1004
TASCHEK R F
6-1503 6-1859
TAUB JAMES M
6-1465
TAYLOR C J
6- 966
TAYLOR DENIS
6- 631
TAYLOR H W
6-1916
TAYLOR ISAAC M
6- 791 6- 793
TAYLOR J G V
6-1012 6-1754
TAYLOR J HERBERT
6- 149
TAYLOR JACK L
6-1243
TECHNICAL INFORMATION SERVICE AEC
6- 491
TEILLAC JEAN
6- 418
TEITEL R J
6-1463
TELEGDI VALENTINE L
6- 704 6-1861
TELEP GEORGE
6-1405
TELLEZ-PLASENCIA HELIODOSE
6-1681
TEMMER G M
6-1887
TEMMER GEORGES M
6- 749
TEMPLE UNIV
6- 760 6- 761 6- 792
6- 794
TEMPLETON CHARLES C
6- 81 6- 82 6- 83
6- 84 6- 102
TENDAM D J
6-1032
TENNESSEE UNIV
6- 5 6- 166 6- 293
6- 504 6-1921 6-1440
6-1441
TENNESSEE VALLEY AUTHORITY
6- 11
TER-MARTIROSYAN K A
6- 374
TERRALL J R
6- 713
TERREAUX CH
6- 926
TERWILLIGER KENT M
6-1538
TEW J T
6-1075
TEWORDT L
6-1369
TEXAS AGRICULTURAL EXPERIMENT STATION
6-1120
THEWLIS J
6- 121
THIELKE N R
6- 200
THIRRING W
6- 673
THODAY J M
6- 39
THOMAS ARBA
6-1139
THOMAS C O
6- 961
THOMAS E E
6-1870
THOMAS G E
6-1286
THOMAS J P
6-1350
THOMAS R C JR
6-1179
THOMAS R G
6-1873
THOMASEN L
6- 916
THOMPSON H W
6-1665 6-1566
THOMPSON P F
6-1624
THOMPSON R W
6-1565 6-1574
THOMPSON S G
6- 357 6- 410 6- 412
THOMPSON T J
6- 718
THOMPSON W B
6-1715
THOMPSON W E
6- 277
THORLEY N
6-1743
THORNDIKE A M
6- 315 6- 316 6-1817
TICHO HAROLD K
6-1351
TICKNOR L B
6-1471
TIMMERHAUS K D
6- 934
TINKHAM MICHAEL
6-1312
TITTERTON E W
6- 371 6- 707
TOBAILEM JACQUES
6-1357
TOBIAS CORNELIUS A
6- 379
TODD JAY JR
6- 929
TOLBERT BERT M
6- 854 6-1180
TOLBERT N E
6- 167
TOLSTOI V E
6-1215
TOM SJ
6- 437
TOMASKOVA L
6-1269
TOMLINSON M
6- 135
TOMPKINS MARIANNE
6- 784 6-1984
TONEY S
6-1473
TONGIORGI V COCCONI
6-1812
TORONTO UNIV CANADA
6-1686
TORPEDO EXPERIMENTAL ESTABLISHMENT GREENOCK GREAT BRITAIN
6- 459
TOSTESON D C
6-1368
TOTTER J R
6-1134
TOURRET R
6- 195
TOUSCHEK B
6- 456
TOWLER OSCAR A JR
6- 385 6-1029
TOWNE SCIENTIFIC SCHOOL UNIV OF PENNSYLVANIA
6- 229 6-1658
TREAS H J
6- 774
TREFETHEN LLOYD MACGREGOR
6-1198
TREFFTZ ELEONORE
6-1271
TREMBLEY JACQUES
6-1827
TREYBAL ROBERT E
6-1693
TRIMMER J D
6-1321
TRUDOVA R G
6- 44
TRUMBORE FORREST A
6-1479
TSIKLIS D S
6- 187
TSYURUPA I G
6- 782
TUCK J L
6- 955
TUCKER CHARLES W JR
6-1183
TULANE UNIV
6-1077 6-1110
TUNG L H
6- 537 6- 800 6- 804
TURKEVICH JOHN
6- 551 6-1186
TURNBULL A H
6- 878
TURNBULL D
6-1239
TURNER C M
6-1586
TURNER R W
6- 601 6-1473
TUROVSKII G YA
6- 177
TYLER SYLVANUS A
6- 784
TYREE S Y JR
6-1396
TYREN HELGE
6-1883

UEBERGANG R
6- 711
UHLIG HERBERT H
6- 586
UMEZAWA H
6- 674 6- 750
UMEZAWA MINORU
6- 740 6-1756 6-1845
UNDERWOOD E E
6- 598 6-1467
UNIVERSITY COLL LONDON ENGLAND
6-1752
UNIVERSITY OF SOUTHERN CALIF
6- 67 6- 445
UPHOFF DELTA
6- 57
UPTON A C
6-1071 6-1093
URBANEK JOHANN
6-1166
UREY H C
6-1754 6-1793
UTAH UNIV
6- 498 6- 534 6- 540
6- 567 6- 620

VAINSHTEIN E E
6- 138
VAINSHTEIN F M
6- 177
VALATIN JEAN G
6- 453 6-1930 6-1940
VALLADAS G
6- 834
VALLANDER S V
6- 624
VAN ALLEN JAMES A
6- 928
VAN ALPHEN E
6- 262

VAN BAALEN J
6- 174
VAN BLITZ C
6-1786
VANDERLAGE F C
6-1192
VAN DER VELDEN H A
6-1294
VANDERWERFF HENRY
6-1112
VAN FAROWE DONALD
6-1096
VANHORN M H
6- 971
VAN LIESHOUT R
6- 420 6- 422
VAN MARLE H
6- 439
VANONI VITO A
6- 184
VAN ORDSTRAND H S
6-1109
VAN ROSSUM L
6-1289
VAN RYSSELBERGHE PIERRE
6-1450
VAN SCIVER W
6-1806
VAN SLYKE DONALD D
6-1115 6-1552
VAN UITERT LEGRAND G
6-1631 6-1633 6-1634
VAN VALKENBURG A
6-1429
VAN WIERINGER H
6-1364
VAN WYE R F
6- 211
VASERIN F I
6- 206
VAUTREY L
6- 696
VENDRYES GEORGES
6- 432
VENKATARAMANIAH M
6- 113 6- 823 6-1148
VENKATESWARLU CH
6-1146
VERKHOVSKII B I
6- 260
VERNON L W
6-1409
VERSTER N F
6- 420 6- 422
VIALLARD R
6- 836
VICTOR CHARLES
6- 418
VIDALE M L
6- 267
VIENS G E
6-1251
VIGNERON LEOPOLD
6- 399
VINCENT E T
6- 918
VIOLET CHARLES E
6- 398
VIRGINIA UNIV
MEDICAL SCHOOL
6- 80 6- 790 6- 802
6- 803
VISCONTI ANTOINE
6- 452
VISHNEVSKII V F
6- 263
VITELOZZI WILLIAM J
6- 182
VITRO CORP OF AMERICA
6- 830 6-1184
VODAR BORIS
6- 879
VOIGT A
6- 820
VOIGT ADOLF F
6- 86 6- 539 6-1119
6-1629 6-1653
VOISIN ANDRE G
6-1299 6-1763
VOLDRICH C B
6- 227
VOLK MURRAY E
6- 792
VOLKIN ELLIOT
6-1172
VOLZ H
6- 754
VON SIEMENS WINRICH
6- 996
VOYVODIC L
6-1761 6-1807

WABER JAMES T
6- 593 6- 805 6-1217
6-1462 6-1731
WABER SANTON
6- 593 6-1217
WACHSMANN F
6-1100
WADE F
6- 956 6- 957
WADSWORTH MILTON E
6-1687
WAFFLER H
6-1020 6-1861
WAGENKNECHT A C
6- 71
WAGGENER W C
6-1625
WAGGONER PAUL E
6- 530
WAGNER C
6-1471
WAGNER CARL
6-1244
WAGNER FRANK JR
6-1048 6-1906
WAGNER WILLIAM C
6-1206
WAHL ARTHUR C
6-1015
WAHL R
6- 632
WALCHER W
6-1793
WALKER D
6- 362
WALL J S
6- 71
WALLACE BRUCE
6- 8
WALLACE P R
6-1536 6-1537
WALLACE W E
6- 235 6-1127 6-1132
6-1472 6-1479 6-1480
WALLENSTEIN MERRILL B
6-1637
WALPOLE R E
6-1692
WALSH P D
6- 556
WALTER JOSEPH L
6-1654
WALTER M
6- 417
WALTON W H
6- 875
WANG C H
6-1179
WANG MING CHEN
6-1902
WANG S J
6- 579
WAPSTRA A H
6- 989 6-1314
WARD J C
6-1055
WARNER J C
6- 597
WARRINGTON P M
6- 75
WARSHAW S D
6- 10
WARSHAWSKY ISIDORE
6-1496 6-1713
WASER P
6- 570
WASSENAAR T
6-1275
WATANABE RONALD
6- 163
WATANABE SATOSI
6-1058
WATERTOWN ARSENAL
6-1341
WATSON H A
6- 126
WATT GEORGE W
6-1125
WATTENBERG A
6-1829
WATTENBERG ALEXANDER
6- 679
WATTS H
6-1810
WEAVER BOYD
6- 285
WEAVER H E JR
6- 345 6- 994
WEAVER W E
6- 885
WEBER A H
6- 954
WEBER C E
6- 252 6-1462
WECHSLER M
6-1238
WEEKS ALICE DOWSE
6-1458
WEEKS JOHN R
6- 897
WEIGL J W
6- 75
WEIL JOHN A
6-1395
WEILL J
6-1786
WEILL JACKY
6- 666
WEINBERG A M
6-1190
WEINBERG L
6-1751
WEINBERGER A J
6-1122
WEINHOUSE SIDNEY
6- 760 6- 761 6- 792
6- 794
WEINSTEIN ROY
6-1312
WEINTRAUB MURRAY
6-1719
WEISER JEANNE D
6-1452
WEISS HERBERT G
6-1797
WEISS JEROME
6- 103
WEISS R J
6-1341
WEISSKOPF V F
6-1522
WELKER JOAN P
6-1123
WELLCOME RESEARCH LABS
6-1112
WELLER JOHN M
6- 791 6- 793
WELLS F H
6- 943
WENNER CHARLES E
6- 760 6- 761
WERNER L B
6- 468
WESTERN RESERVE UNIV
6- 868
WESTERN RESERVE UNIV
SCHOOL OF MEDICINE
6- 33 6- 50 6- 546
6-1378
WESTINGHOUSE ATOMIC
POWER DIV
6- 893
WESTINGHOUSE RESEARCH
LABS
6-1484
WESTPHAL K
6-1891
WETHERILL GEORGE
6- 972
WEXLER AARON
6-1739
WEXLER SOL
6-1420
WEYGAND FRIEDRICH
6- 569 6- 853
WEYL W A
6- 116 6- 117 6- 118
6- 119
WHALING W
6-1859
WHEELER H L JR
6-1196 6-1234
WHEELON C A
6- 906
WHITCHER STANLEY L
6-1343
WHITE ALBERT EASTON
6-1207
WHITE D F
6-1088
WHITE M G
6-1887
WHITE MARCIA R
6-1615 6-1616
WHITE R STEPHEN
6- 324 6- 571
WHITE SIDNEY
6- 19
WHITE WILLIAM C
6-1421
WHITEHEAD MARIAN
6- 669
WHITEHOUSE W J
6-1851
WHITMORE F C
6- 130
WICK GIAN CARLO
6-1544
WIDGOFF M
6-1812
WIED GEORG L
6- 52

WIESNER J B
6-1750
WIGNER E
6-1A39
WIJSMAN R A
6- 777
WILBUR KARL M
6-1590
WILCOX HOWARD A
6- 397
WILD ROBERT LEE
6- 400
WILDE W S
6-1077
WILDER C D
6-1569
WILETS L
6-1930
WILEY RICHARD H
6- A51
WILHELM H A
6- 278
WILKINS C J
6- 133
WILKINS J ERNEST JR
6- 384 6-1285
WILKINS J J
6- 699 6- 709
WILKINSON D H
6-1861
WILKINSON G
6-1857
WILKINSON K L
6- 639
WILKINSON R S
6-1352
WILLARD H B
6-1535
WILLARD JOHN E
6-1659
WILLIAMS ARTHUR H
6- 430
WILLIAMS DALE D
6-1237
WILLIAMS I
6-1600
WILLIAMS J H
6-1503 6-1887
WILLIAMS ROGER D
6-1103
WILLIAMS W S C
6- 370
WILLIAMSON G K
6- 605 6- 606
WILLMORE TRACY A
6-1216
WILSON A H
6-1772
WILSON C W
6- 392
WILSON E BRIGHT JR
6-1417
WILSON ELIZABETH
6- 734
WILSON H A
6- 992
WILSON H B
6-1089
WILSON H W
6-1559
WILSON J G
6-1A24
WILSON RICHARD
6- 337
WILZBACH K E
6-1176

WINKLER H
6-1A84
WINSOR FREDERICK J
6- A88
WINZLER RICHARD J
6- 72
WISCHHUSEN E
6- 272
WISCONSIN UNIV
6- 79 6- 735 6- 736
6- 985 6- 986 6- 987
6-1636 6-1650 6-1878
WISCONSIN UNIV
COLL OF AGRICULTURE
6- 71
WISE E M
6- A05
WISER WENDELL H
6-1426
WITZIG WARREN F
6- A93
WOLFE R A
6- 916
WOLFENDALE A W
6- 257
WOLFF P
6- 918
WOLFF PETER A
6- 389
WOLKERS G J
6-1275
WOLLAN E O
6-1038 6-1548
WOLTERINK LESTER F
6- 529
WOMELDORPH RAYMOND C
6-1216
WONG J B
6-1708
WOOD BETTY
6-1090
WOOD GEORGE P
6- A65
WOODBURY ERIC JOHN
6-1A75
WOODRUFF E P
6-1489
WOODS M C
6- 25
WOOLARD LOUIS E
6-1224
WORNER H W
6-1247 6-1591
WORTHINGTON WILLIAM
JACOB JR
6-1A64
WOUTERS LOUIS F
6- 386 6- 483 6- 715
WRIGHT J
6- 135
WRIGHT J M
6- 558 6- 563
WRIGHT W B
6-1123
WU C S
6-1909
WYANT DONALD G
6-1456
WYANT ROBERT A
6- A88
WYMAN L L
6-1780

YAFFE RUTH POWERS
6- 339 6-1110 6-1629
6-1653

YALE UNIV
6-1114
YALOW ROSALYN
6- 68
YAMAGUCHI YOSHIO
6- 740
YANG C N
6- 328 6- 725
YANKLEY ALEXANDER
6- 19
YEAMAN M D
6- A14
YEARIAN H J
6- A76
YEKUTIELI G
6- 259 6- 708 6-1826
YESHIVA UNIV
6-1714
YIH C S
6- 979
YOCHEM CATHERINE
6-1288
YOLLES S
6-1396
YOST DON M
6- 554
YOUNG F W JR
6-1349
YOUNG G T
6- A19
YOUNG L
6-1227
YOUNIS S
6-1020
YUAN LUKE C L
6-1525
YUSTER PHILIP
6-1427

ZABEL C W
6- 980
ZACKAY VICTOR F
6- 202
ZAFFARANO D J
6- 735
ZAJAC BARBARA
6-1921
ZARZYCKI GEORGES
6- 541
ZEJDROSKI E L
6-1130
ZELDES H
6- 435 6- 436
ZEMANSKY M W
6-1280
ZHUKOVSKII N N
6- 421
ZIEGLER W T
6- 147
ZILL L P
6- 101 6- 148
ZIMMERMAN C
6-1567
ZIMMERMAN WILLIAM III
6- 89
ZINN W H
6- 477 6-1583
ZIRINSKY S
6- 600 6-1238
ZUNTI W
6-1007 6-1017 6-1023
ZWOLINSKI BRUNO J
6- 620 6-1637
ZYRYANOVA L N
6- 433

SUBJECT INDEX

The underscored number followed by a colon is the volume number, and the numbers following are the abstract numbers. The designation (R) following an abstract number indicates that it is the abstract of a progress report; the designation (J) indicates that it is an abstract of a journal (published literature) article; and the designation (P) indicates that it is an abstract of a patent. Abstract numbers for reports other than progress reports carry no letter designations.

Absorption spectra
(See also subheading spectra under materials and radiation; also heading identified by name of radiation, e.g., Neutron spectra.)
of anions, effect of complex formation on, 6: 1428
interpretation and theory of, 6: 1302(R)
Accelerators
(See also specific accelerators.)
performance of factors affecting, 6: 1393(R)
Acetates
metabolism of, by Propionibacterium pentosaceum, 6: 1697
Acetic acid
ionization of, in dioxane-water solutions, 6: 1631
isotopic exchange reactions in, 6: 1626
Acetic acid (labeled)
synthesis of methyl-labeled, 6: 1699
Acetic acid, bromo-
polarographic behavior of, 6: 538
Acetic acid, bromo-, ethyl ester
polarographic behavior of, 6: 1639, 1640
Acetic acid, chloro-
polarographic behavior of, 6: 807
Acetic acid, chloro-, ethyl ester
polarographic behavior of, 6: 807
Acetic acid, (Ethylenediamine)tetra-
toxicology of, and effect of, on excretion of Pu, 6: 496(R)
Acetic acid, trifluoro-
molecular dipole moments of, 6: 131(J)
Acetic acid, vinyl ester (labeled)
synthesis of, 6: 174(J)
Acetic anhydride
isotopic exchange reactions in, 6: 1626
Acetone
catalytic reduction of, 6: 551
Acetone, thenoyltrifluoro- complexes
of Th in aqueous solution, ionization of, 6: 1625
Acetophenone
acylation of, with acetic anhydride, 6: 91(R)
electric conductivity of solutions of cobalt(II) nitrate in, 6: 84
Acetyl chloride
isotopic exchange reactions of, in acetic anhydride, 6: 1626
Acetylene
molecular vibration of, and of its deuterated forms, 6: 137(J)
Acetylene, diphenyl-
scintillations in, 6: 961
Acids
(See also specific compounds; also general and specific headings for acids, e.g., Amino acids; Fatty acids; Nucleic acids.)
corrosive effects on Ni, Ni alloys, and stainless steel, 6: 1217
Actinium isotopes Ac^{228}
beta spectra of, 6: 1557(J)
Actinium isotopes Ac^{229}
half lives of, 6: 284
Actinium isotopes Ac^{230}
formation and decay schemes of, 6: 284
Adenosine phosphoric acids
fluorimetric analysis of, 6: 1134
Adenylic acid
exchange of P of, with inorganic phosphate, 6: 802
Adenylpyrophosphoric acid
exchange of P of, with inorganic phosphate, 6: 802
Adrenal glands
effects of adrenaline on, 6: 1075
effects on survival of rats after x irradiation, 6: 507
Adrenaline
effects on adrenal and thyroid glands, 6: 1075
Adrenocorticotropic hormone
effects on fecal lysozyme titer, 6: 9
effects on gastric secretions, 6: 7
in treatment of radiation sickness, 6: 58(J)
Adsorption
(See also subheading under materials adsorbed; also subheading adsorptive properties under adsorbents.)
of dissolved substances on liquid surfaces, measurement of, 6: 176(J)
Aerodynamics
performance of bare-wire thermocouples in air streams, 6: 1713
Aerosols
(See also Particles, Powders, and Smokes.)
collection of, by atomized sprays, 6: 1439
dispersal of, in lower atmospheric layers, 6: 676(R)
filtration of, inertial mechanism in, 6: 517(J)
flocculation of, by intense high-frequency sound, 6: 862
impaction of, on surface and body collectors, 6: 1708
polydisperity and nucleation in, 6: 609(R)
sampling and analysis of, equipment for, 6: 657(R)
Air
(See also Gases and Meteorology.)
analysis of, electronic method for, 6: 576(J)
excitation potentials of, 6: 396(J)
fission products in, maximum allowable concentrations of, 6: 1611
ionization in, from β ray point sources, 6: 763
ranges of protons in, 6: 1345(J)
Air flow
(See also Fluid flow and Gas flow.)
convection at high velocities and temperatures, measurement of, 6: 1717(J)
heat-transfer coefficients and friction factors for, in an inconel tube, 6: 866
in large rooms, scale-model studies of, 6: 873(J)
performance of bare-wire thermocouples in, 6: 1713
turbulence in, characteristics of, 6: 677(R)
Aircraft engines
(Covering chiefly equipment and theory of engines not dependent on nuclear energy: see also Turbojet engines.)
design of nuclear turbojet, 6: 1589
heat exchangers for, 6: 865
Albumins
exchange of, between blood and lymph, 6: 25
Aldol (labeled)
synthesis of, 6: 174(J)
Aldonic acid
in synthesis of glyconyl peptide, 6: 162
Algae
carbon dioxide metabolism in, pH effects on, 6: 531
pigments in blue-green, 6: 14
Alkali halide crystals
fluorescence of, α- or γ-induced, 6: 653(R)
fluorescence, phosphorescence, energy storage, and release of stored energy by light in, 6: 1749(R)
Alkali halides
phase studies of, 6: 96(J)
Alkali metal compounds
heat of reaction of, 6: 94(J)
Alkali metals
(See also specific element concerned.)
analysis of mixtures of, and alkaline earths, 6: 825(J)
Alkaline earth metals
analysis of mixtures of, and alkali metals, 6: 825(J)
Alkaline earth sulfides
fluorescence of, α- or γ-induced, 6: 653(R)

Alkanes
absorption of photons of cosmic radiation in, 6: 258(J)
Alkyl iodides
influence of structure phase and added I_2 on the organic yields of the I^{127} (n,γ) I^{128} reaction in, 6: 1659
Alloys
(See also Steel, Stainless steel, and alloys of individual metals, e.g., Aluminum alloys.)
bibliographies on light, 6: 904
equation of diffusion in binary, solutions of, 6: 1244(J)
Alpha decay
correlation of rates of, 6: 363
in the medium heavy elements, rates of, 6: 410
of nuclides with atomic numbers less than 83, rates of, 6: 1556
Alpha particles
angular correlations of, from photodisintegration of C^{12}, 6: 1861
chemical effects on hydrocarbons, 6: 1421(J)
chemical effects on water, 6: 143(J), 144(J)
detection and measurement of, 6: 474(P)
dosage determinations of, in single biological cells, 6: 293
effects on alkaline phosphatase activity, 6: 28
effects on liquids, 6: 556
effects on semiconductors, 6: 557(J)
electron-hole production in Ge by, 6: 1044(J)
emitters of, resulting from α-particle bombardment of Pb, 6: 411
from fission of U^{235}, and Pu^{239}, energy distribution of, 6: 698
genetic effects on fungi, 6: 1085
lethal dosage of, compared with x radiation, 6: 1607(J)
from $Li^6(d,\alpha)$, angular distribution of, 6: 710(J)
from $Li^7(p,\alpha)$, angular distribution of, 6: 711(J)
measurement of, proportional detectors for, 6: 959
measurement of tracks of, in nuclear emulsions, 6: 644
mitotic effects on roots, 6: 39(J)
monitoring of, instrument for, 6: 1805(J)
oxidation of arsenite in aqueous solution by, 6: 837(J)
oxidation and reduction produced by, 6: 146(J)
from photodisintegration of C^{12}, energy distribution of, 6: 704(J)
production of abnormal spore germination and microthallus in fungi by 6: 1073
from proton bombardment of Be^9, 6: 405
from rare-earth nuclei, 6: 412
response of scintillation crystals to, 6: 966(J)
scattering of, in He, 6: 1033(J)
Alpha sources
calibration of, apparatus for, 6: 474(P)
Aluminum
absorption of cosmic electrons in, 6: 262(J)
absorption of cosmic photons in, 6: 258(J)
analysis of, by pile activation, 6: 549(J)
annealing textures in rolled, 6: 1242(J)
bibliographies on production, fabrication and uses of, 6: 904
cathodic sputtering of, 6: 252
colorimetric analysis of, for B, 6: 1140(J)
corrosion of, by H_2O_2, 6: 240(J)
dynamic coefficients of, 6: 245(J)
electric conductivity of, effect of elastic deformation on, 6: 241(J)
electron scattering by, 6: 1035(J)
excitation potentials of, 6: 396(J)
extinction in, 6: 605(J)
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
heat of combustion of, 6: 1131(J)
helium diffusion through, 6: 1745
infrared spectra of, calculations, 6: 161(J)
intensities in diffraction pattern of, effect of cold work on, 6: 606(J)
lower oxidation states of, 6: 1125(J)
π^--meson scattering cross sections of, 6: 319
π^0-mesons from, by photon reactions, 6: 317
neutron cross sections of, 6: 1526
photometric determination of, in Zn and steel, 6: 1139(J)
plastic flow in, 6: 603(R)
ranges of protons in, 6: 1345(J), 1901(J)
recrystallization texture of, in drawn wire, 6: 1743(J)
rolling textures in, 6: 1245(J)
scattering of neutrons by, 6: 980
slip bands and hardening in, during plastic deformation, 6: 1258(J)
slip formation in polycrystalline, 6: 899
stress corrosion of, 6: 1219(J), 1624
Aluminum alloys
bibliographies on, 6: 904
corrosion of surface treated, 6: 1735
creep and tensile properties of dilute α solid solutions of, 6: 1235
Aluminum alloys (cont'd.)
fatigue strength of, effect of shape of cross section on, 6: 193(J)
grain refinement of cast, by addition of Ti and B, 6: 1253(J)
grain refinement of, mechanism of, 6: 907(J)
metallurgical properties of, for high temperature use, 6: 596
plastic properties of, effect of alloying elements on, 6: 231(R)
polarographic analysis of, for Cr, 6: 1407(J)
welding of, by argon arc process, 6: 859(R)
Aluminum alloys (alclad)
mechanical and corrosion tests of spot-welded, in tidewater and weather, 6: 888
Aluminum–chromium compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Aluminum complexes
equilibrium constants of, 6: 535
Aluminum–copper alloys
aging of, x-ray-diffraction analysis of, 6: 244(J)
Aluminum–copper compounds (intermetallic)
crystal structure of, 6: 827(J)
Aluminum–copper-magnesium alloys
aging of, x-ray-diffraction study of, 6: 244(J)
constitution diagrams of, 6: 243(J)
Aluminum–copper single crystals
tensile properties of, 6: 603(R)
Aluminum crystals
plastic deformation in, x-ray and micrographic study of, 6: 1255(J)
Aluminum iodides
preparation of, 6: 1133(J)
Aluminum isotopes
mass defect of, 6: 1553
Aluminum isotopes Al^{24}
formation and nuclear properties of, 6: 1006
formation, mass, and decay of, 6: 737
Aluminum isotopes Al^{25}
energy levels of, 6: 986
Aluminum isotopes Al^{27}
alpha reactions (α,p) coincidences of protons and gammas, 6: 1878(J)
binding energy of, calculation, 6: 333(J)
deuteron reactions (d,d′) and (d,p), 6: 1008(J)
energy levels of, 6: 1008(J)
gamma reactions (γ,n), 6: 1876(J)
mass of, 6: 1530
nuclear magnetic moments of, 6: 995(J)
proton bombardment of, γ rays from 6: 440(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
Aluminum isotopes Al^{28}
beta and γ emission and mass of, 6: 1530
energy levels of, 6: 1008(J)
Aluminum–magnesium alloys
corrosion of, mechanism of, 6: 248(J)
reaction of, with steam, 6: 1257(J)
stress-corrosion mechanism in, 6: 1219(J)
stretcher-strain markings in, 6: 1252(J)
Aluminum–magnesium–silicon alloys
grain refinement of, effect of various additions on, 6: 250(J)
Aluminum–magnesium–zinc alloys
corrosion of, mechanism of, 6: 248(J)
Aluminum–molybdenum compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Aluminum–nickel alloys
crystal structure of, in β phase, 6: 242(J)
Aluminum–nickel compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Aluminum oxide films
preparation and electrical properties of, 6: 1391
Aluminum oxides
analysis, fabrication, preparation, and properties of, compilation of, data on, 6: 1447
ceramic containing, 6: 886(P)
thermal conductivity of, 6: 204, 1448(R)
Aluminum–silicon alloys
grain refinement of, effect of various additions on, 6: 250(J)
Aluminum–silver alloys
fatigue mecahnism in, 6: 1248(J)
Aluminum single crystals
delay time for the initiation of slip in, 6: 1742(J)
plastic deformation of, 6: 247(J), 618(R), 1470(R)
plastic deformation in, x-ray microscopy method of studying, 6: 1250(J)
x-ray asterisms from deformed, 6: 1254(J)
Aluminum–thorium alloys
metallography of, with polarized light, 6: 1228

Aluminum–titanium alloys
constitution diagram and microstructure of, 6: 908(J)
crystal structure of, from x-ray diffraction data, 6: 1243(J)
preparation of, from TiO_2 and Al powder, 6: 607(J)
Aluminum–uranium alloys
metallography of, with polarized light, 6: 1228
Aluminum–zirconium alloys
constitution diagrams of, 6: 591(R)
Americium
bone deposition of, 6: 1389
chemical separation of, 6: 468(P)
radiometric determination of, 6: 105
separation of from Pu and U, 6: 105
Americium fluorides
vapor pressure and heat of sublimation of, 6: 123
Americium isotopes Am^{241}
alpha emission, measurement of, 6: 1481
alpha spectra of, 6: 415
decay schemes of, 6: 413
slow neutron reactions of, 6: 357
Americium isotopes Am^{242}
formation and slow neutron fission of, 6: 357
Americium isotopes Am^{243}
formation and slow neutron fission of, 6: 357
Amherst Coll.
progress reports, 6: 1425(R)
Amino acids
biosynthesis of, by ustilago zeae, 6: 759
chromatographic determination of, in normal and x irradiation egg yolks, 6: 508
isotopic equilibration analysis of, for glutamic acid, 6: 819(J)
in synthesis of glyconyl peptides, 6: 162
uptake of glucose C^{14} by, in mouse brain, 6: 72(J)
Ammonia
biosynthesis of, by bacteria, 6: 71
compressibility isotherms and thermodynamic functions of mixtures of, with H_2 and N_2, 6: 1275(J)
synthesis of, in γ-ray field, 6: 1431
Ammonia (liquid)
thermodynamic functions of ammoniacal species in, 6: 809
Ammonium chlorides
atomization of, 6: 1439
Ammonium fluoferrates
infrared spectrum of, 6: 1667(J)
Ammonium fluorides
fluorination of chlorides with; 6: 133(J)
Ammonium sulfites
atomization of, 6: 1439
Ammonium vanadium sulfates
absorption spectra of, 6: 1647(J)
Amplifiers
(See also electron tubes.)
design of, 6: 407(R), 635(J)
operating manual for linear type AEP 1444 (Canada), 6: 1495
overloading characteristics of type 1444 (Canada), 6: 1802(R)
pulse type, performance data for, 6: 1278(R)
Anemia
induced by diversion of erythrocytes into the lymph by x rays, 6: 1599
induced by Ra, 6: 787
pathogenesis of postirradiation, 6: 1598
sodium and K levels of erthrocytes in sickle cell, 6: 1388
Animal care
(Caging, sanitation, ventilation, feed, disease control, etc.; see also subheading care under specific animals.)
criteria for design and air conditioning of rodent quarters, 6: 1373
Animal cells
alpha dosimetry in single, with scintillation counters, 6: 293
division of, changes in mitotic spindle during, 6: 5
effects of malignancy on, 6: 65(J)
effects of x radiation and colchicine on, 6: 36
effects of radiation on, 6: 771(J)
effects of radiation on, chemical modification of, 6: 49
effects of x radiation on respiration in, 6: 763, 1079, 1084
metabolism of, studies in tissue culture, 6: 797(J)
Anion exchanging compounds
adsorptive properties of, theory, 6: 1687
Anions
absorption spectra of, effect of complex formation on, 6: 1428
Anoxia
effects on radiation damage in mice, 6: 45
protection against radiation damage in mouse embryos by, 6: 1078
Anthers
phosphatase activity of, 6: 3
Anthracene
purification of, 6: 533
specific fluorescence of, exciton theory of, 6: 306(J)
Anthracene crystals
preparation and properties of, 6: 533
response of, to charged particles, 6: 966(J)
scintillation efficiency of, effect of pressure on, 6: 826
Anthracene, diphenyl-
scintillations in, 6: 961
Anthranilic acid
in maize, as an agent causing blue fluorescence, 6: 774(J)
Antibiotics
(See also specific antibiotics.)
in therapy of radiation sickness, 6: 784
in therapy of radioinduced bacteremia, 6: 1384
Antibodies
formation of, effects of radiation on, 6: 1595
formation of, effects of x rays on, 6: 1375
localization of, prepared from rat aorta, 6: 1113
preparation of, from rat aorta, 6: 1113
Antimony
gamma absorption cross sections of, 6: 1326
gamma cross sections of, 6: 364
Antimony isotopes Sb^{121}
gamma reactions (γ,n), 6: 1871(J)
Antimony isotopes Sb^{122}
beta spectra of, 6: 1304(R)
isomeric transition of, 6: 409
Antimony isotopes Sb^{123}
gamma reactions (γ,n), 6: 1871(J)
Antimony isotopes Sb^{124}
beta-gamma angular correlation in, 6: 1913(J)
forbidden β spectra of, 6: 1914(J)
Antimony isotopes Sb^{125}
yield and half lives of, from U^{233} and U^{235} fission, 6: 1857
Apatites
analysis of, for calcite, 6: 1452
Archeological specimens
age estimations of, by radiocarbon analysis, 6: 755(J)
Argentina (Chubut Province)
geology of, 6: 215(J)
Arginine
biosynthesis of, by yeasts, 6: 794
Argon
adsorption of, on C, 6: 1425(R)
collision probability for slow electrons in, 6: 1490
ionization of, by electrons, 6: 1263(J)
multiple scattering of β^+ particles in, 6: 1899(J)
neutron scattering cross sections of, 6: 679
scattering of electrons and positrons in, 6: 401(J)
thermodynamic properties of adsorbed, on titanium dioxide, 6: 154(J)
Argon isotopes A^{36}
mass of, 6: 991(J)
Argon isotopes A^{37}
nuclear recoils from decay of, 6: 1909
Argon isotopes A^{38}
mass of, 6: 991(J)
Argon isotopes A^{39}
half lives of, 6: 1924(J)
Argon isotopes A^{40}
deuteron reactions (d,p), 6: 1870(J)
photoprotons from, energy distribution of, 6: 1861
Argon isotopes A^{41}
formation of, by the reaction A^{40} (d,p), 6: 1870(J)
properties of energy states of, 6: 1859
Argonne graphite reactor
reactivity of, measurement, 6: 1527
Argonne National Lab.
progress reports, 6: 1506(R)
progress reports on biological and medical research, 6: 500(R)
Armour Research Foundation
progress reports, 6: 604(R)
progress reports on Zr-base alloys, 6: 591(R)
Arsenic isotopes As^{75}
magnetic resonances and nuclear magnetic moments of, 6: 345(J)
nuclear magnetic moments of, 6: 1850(J)
Arsenic isotopes As^{76}
gamma emission of, 6: 741(J)
tissue distribution of, 6: 1614(J)
in treatment of Hodgkin's disease and fungoid mycosis, 6: 1614(J)

Arsenite ion
oxidation of, by α and x rays in aqueous solution, 6: 837(J)
Ascorbic acid
inactivation of enzymes by, 6: 1590
oxidation of, effect of thyroxine and derivatives on, 6: 80, 803
radiosensitivity effects of, 6: 520(R)
Astatine
uptake of, by thyroid gland, 6: 496(R)
Astrophysics
isotopic abundances in universe, 6: 1754
transition probabilities for C_2 and H_2^+, 6: 256
Atherosclerosis
chemical prophylaxis of, by heparin, 6: 19(J)
pathology and chemical prophylaxis of, 6: 496(R)
Atmosphere
balance of ions in, 6: 439(J)
diffusion in, from a point source, 6: 979
radioactivity in, concentration of, 6: 429(J)
temperature fluctuations of, under different meteorological conditions, 6: 1520(R)
turbulence and diffusion of particulate matter in, 6: 676(R), 1516(R), 1517(R), 1519(R)
turbulence in, characteristics of, 6: 677(R)
turbulence of, and particle distribution in, measurement of, 6: 1518(R)
velocities in, frequency distributions of, 6: 331(J)
Atomic beams
focusing by magnetic field, theory and apparatus for, 6: 1335(J)
Atomic bomb explosions
(See also Radiological warfare.)
azimuth and elevation determination of, 6: 1572(P)
effects of radiations from, on seed, 6: 32
fall-out from, 6: 1(R)
lethal effects of, 6: 1587(J), 1588(J)
relation of atmospheric radioactivity to, 6: 429(J)
Atomic energy
chemical aspects of, lectures on, 6: 833(J)
Atomic Energy Commission
administrative reports, 6: 491
organization and function of, 6: 1069(J)
reactor program of, lecture on, 6: 1318
research programs in physics, 6: 1487
Atomic Energy Project (Canada)
progress reports, 6: 1802(R)
Atomic Energy Project, Univ. of Rochester
progress reports, 6: 509(R)
Atomic Energy Project, Western Reserve Univ.
progress reports, 6: 1379(R)
Atomic Energy Reserch Establishment (Great Britain)
atomic central heating plant at, 6: 1068(J)
safety handbooks used at, 6: 514
Atomic structure
(See also as subheading under specific elements.)
wave functions for the p shell, 6: 1364(J)
Aureomycin
radiosensitivity effects of, on dogs, 6: 516(R)
Aurintricarboxylic acid
in treatment of Be poisoning, 6: 1615, 1616
Azides
radiosensitivity effects of, 6: 51(J)

Bacteremia
antibiotic therapy of radioinduced, 6: 1384
Bacteria
(See also by species.)
effects of P^{32} β particles on viability of, 6: 1603(J)
effects of radiation on, chemical modification of, 6: 47
effects of radiation on genetic changes in, 6: 1086
effects of x radiation on, bibliography on, 6: 1377
fermentation of glucose by, 6: 165
formation of formic hydrogenylase by, effects of x-radiation on, 6: 29
metabolism of, as affecting oxidation of sewage, 6: 1597
metabolism of, studied by ethanol synthesis in Pseudomonas lindneri, 6: 1619(J)
metabolism of, studied in Lactobacillus casei purine anabolism, 6: 1112
metabolism of, studied in an oxidative cycle in the propionic acid bacteria, 6: 1697
nitrogen fixation by, 6: 71
ribonucleic acids determination in, 6: 762
Bacterial slimes
adsorption and assimilation of P^{32} by, 6: 789(R)
Barium
spectrographic determination of, in organic solids, 6: 158
uptake and distribution of, in Drosophila, 6: 503, 1595
Barium carbonates
neutron diffraction analysis of, 6: 1548
Barium chlorides
ionization of, 6: 541(J)
Barium complexes
dissociation of, in aqueous solutions, 6: 564(J)
Barium compounds
chelation of, with β-diketones, 6: 1634
Barium isotopes Ba^{133}
isomeric magnetic dipole transitions in, 6: 335
Barium isotopes Ba^{134}
gamma cascades in, following β decay of Cs^{134}, 6: 689(J)
nuclear spin of, 6: 689(J)
Barium isotopes Ba^{137}
internal conversion in, 6: 1919(J)
Barium isotopes Ba^{138}
gamma and x-ray emission of, accompanying La^{138} decay, 6: 1916(J)
Barium isotopes Ba^{140}
preparation of carrier-free, 6: 1422
yield of, from proton-induced fission of U, 6: 1856
Barium titanate single crystals
dielectric properties of, 6: 207(J)
Battelle Memorial Inst.
progress reports, 6: 1736(R)
Bearings
corrosion of, and corrosion inhibitors for, 6: 1218
design and lubrication of, 6: 182
Benemid
radiosensitivity effects on chickens, 6: 520(R)
Benzanthracene
chemical properties of, changes in after irradiation, 6: 1170(J)
Benzanthracene (labeled)
synthesis and structure determination of, 6: 175(J)
Benzene
chemical effects of α particles on, 6: 1421(J)
fluorescence of, α- or γ-induced, 6: 653(R)
molecular vibrations of, and of its deuterated forms, 6: 137(J)
solubility of metallic nitrate hydrates in, 6: 83
Benzene (labeled)
effects of radiation on benzene-d_6, 6: 1676
Benzene (1,2-epoxyethyl)-
reaction mechanisms of, 6: 1390
Benzenephosphonic acid, p-ethyl-, dimethyl ester
synthesis of, 6: 851
Benzimidazoles, 1-glycosyl-
synthesis of, 6: 1178(J)
Benzoic acid
polarographic behavior of, 6: 806
as reagent in determination of Zr, 6: 113(J)
Benzoic acid, p-benzenesulfonyloxy-
preparation of, 6: 93
Benzoic acid, p-chloro-, mercury salt
effects on mice, 6: 763
Benzoic acid, iodo-
polarographic behavior of, 6: 806
Benzoxazole, 2-(o-hydroxyphenyl)-
as reagent for gravimetric determination of Cd, 6: 1654
Beryllium
alpha reactions (α,n), 6: 1537
cathodic sputtering of, 6: 252
chemical and spectrographic analysis of, 6: 1657
deuteron reactions (d,p) and (d,n), 6: 1892(J)
electron scattering by, 6: 1036(J)
extrusion, forging, welding, and tensile properties of, 6: 234
fluorimetric determination of traces of, 6: 543
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
π^0-mesons from, by photon reactions, 6: 317
metallography of, with polarized light, 6: 1228
neutron cross sections of, 6: 1526
neutron scattering cross sections of, 6: 493(J)
neutron total cross sections for, 6: 1017(J), 1023(J)
penetrating showers produced in, by cosmic radiation, 6: 265(J)
proton reactions (p,n), 6: 1535, 1887
as a reactor moderator, 6: 1315
toxicology of, review of research on, 6: 1109(J)
Beryllium complexes
equilibrium constants of, 6: 535

Beryllium isotopes
energy levels of, α-particle models for, 6: 691(J)
Beryllium isotopes Be^{7}
formation of, by proton bombardment of C^{12}, 6: 376(J)
neutron reactions (n,p), 6: 1859
nuclear reocils from decay of, 6: 1909
recoil momenta in decay of, 6: 349(J)
in uranium fission products, search for, 6: 358
Beryllium isotopes Be^{8}
alpha spectra of, 6: 493(J)
calibration of nuclear emulsions using electron-positron paris from, 6: 1807(J)
energy levels of, 6: 699, 709(J), 1880(J)
Beryllium isotopes Be^{9}
alpha reactions (α,p), (α,d), and (α,α'), 6: 1010(J)
deuteron reactions, 6: 1880(J)
deuteron reactions (d,t), 6: 375(J), 1859
gamma reactions (γ,n), yield and energy of neutrons from, 6: 1829
π°-mesons from, by proton reactions, 6: 670
proton reactions (p,α), 6: 405, 1016(J)
proton reactions (p,d), 6: 1016(J), 1334(J)
proton reactions (p,γ), 6: 405
proton reactions (p,n), 6: 1859
Beryllium isotopes Be^{10}
nuclear spin and energy levels of, formed by the Be(d,p) reaction, 6: 1892(J)
Beryllium oxide powders
crystal structure of, 6: 1726(J)
Beryllium poisoning
(See also Beryllium — toxicology.)
chemotherapy of, with aurintricarboxylic acid, 6: 1615
chemotherapy of, with various dyestuffs, 6: 526(R)
control of, review of industrial hygiene methods for, 6: 788(J)
therapy of, with aurintricarboxylic acid, 6: 1616
Beryllium single crystals
mechanical properties and plastic deformation of, 6: 229(R)
Beryllium–thorium compounds (intermetallic)
x-ray-diffraction analysis and crystal structure of, 6: 1729
Beryllium–uranium compounds (intermetallic)
neutron and x-ray-diffraction analysis and crystal structure of, 6: 1729
Beta decay
(See also subheading beta emission under elements and isotopes.)
angular correlation of radiation accompanying, theory, 6: 688(J)
matrix elements of, 6: 431(J), 738(J)
tables of data on, 6: 433(J)
theorem involving binding energies in relation to, 6: 1558(J)
theory of, 6: 408, 740(J), 1909
theory of, of Bi^{210} and Tm^{170}, 6: 1356(J)
theory of, interaction in, 6: 366(J), 1941(J)
theory of, monographs, 6: 1554
Beta particles
(From nuclear processes; including negatorons, etc.; see also subheading beta reactions under specific elements and isotopes. See also Electrons and Positrons.)
absorption curves for theoretical, 6: 732(R)
biological effects on viability of E. coli, 6: 1603(J)
blackening of photographic plates by, 6: 1287
detection and measurement of, 6: 650(R), 960(R)
determination of relative intensity of positive and negative, 6: 475(P)
dosage determination of, with photoemulsions, 6: 964(J)
effects on biochemical oxidation of domestic sewage, 6: 1597
effects on liquids, 6: 556
energy changes of, in a cloud chamber, 6: 723(J)
multiple scattering of + and –, in A, 6: 1899(J)
portable instruments for measuring, 6: 313(J)
proportional counter for soft, 6: 309(J)
scattering of, following passage through matter, 6: 1348(J)
scattering of, in air, 6: 1628
self-scattering and self-absorption of, in NaCl, $Pb(NO_3)_2$ and $Tl(NO_3)$, 6: 1344
Beta spectra
(See also subheading beta emission under specific elements and isotopes.)
determination of, by nuclear emulsions, 6: 1560(J)
Fermi distribution for, recoil corrections to, 6: 1920(J)
influence of coulomb field on, tables, 6: 433(J)
Beta spectrometers
correction of magnetic lenses used in, 6: 281(J)
design of, 6: 444(R)
design and performance of, 6: 422(J), 954(R)
design of, at Zeeman Lab., Amsterdam, 6: 1371
Beta spectrometers (cont'd.)
operation of semicircular type, 6: 995(J)
in study of γ-rays associated with selected neutron-induced radioactivities, 6: 1907
Betatrons
instrumentation for, 6: 680(R)
monitor and x-ray yield integrator for, 6: 1799
spectra of, experimental determination of, 6: 1808(J)
technique for producing γ-n and γ-p activities with, 6: 279(J)
Bevatron
design of, 6: 1481
Bibliographies
(See also as subheading under specific subjects.)
on analysis for CO_2, H_2, and O_2, 6: 110
Biological systems
isotopic effects of C^{14} on, 6: 1387
Biophysics
influences of quantum theory on, 6: 18(J)
Biphenyl
scintillations in, 6: 961
Bismuth
electrolytic separation and determination of, 6: 1138(J)
metallography of, with polarized light, 6: 1228
photofission of, 6: 1860
photoneutrons from, angular distribution of, 6: 1861
scattering of neutrons by, 6: 980
tissue distribution of, in rats, 6: 496(R)
Bismuth (liquid)
corrosive effects on metals and alloys, 6: 900
Bismuth–cadmium alloys
phase studies of, 6: 1469(R)
Bismuth isotopes Bi^{205}
alpha emission from, 6: 1416
Bismuth isotopes Bi^{207}
gamma emission of, accompanying K-capture decay, 6: 1915(J)
Bismuth isotopes Bi^{209}
mass determination of, 6: 1283
Bismuth isotopes Bi^{210}
beta spectra of, theory, 6: 408, 1356(J), 1909
blackening of photographic plates by ρ particles from, 6: 1287
bremsstrahlung from, angular correlation and intensity of, 6: 1047
electron spectra of, 6: 954(R)
evaporation and deposition of, on a Cu disk, 6: 1501(J)
isomeric states of, 6: 414
positive particles near a source of, 6: 1049(J)
spectra of, 6: 1304(R)
Bismuth isotopes Bi^{211}
formation, half lives, and alpha emission of, 6: 411
Bismuth isotopes Bi^{212}
alpha emission from, 6: 438(J)
internal conversion lines of, 6: 995(J)
Bismuth–lead alloys (liquid)
corrosive effects of, 6: 1723
thermal expansion of, 6: 1723
Bismuth–lead eutectic
corrosive effects of, on metals and alloys, 6: 901
heat-transfer characteristics of, under forced convection, 6: 1712
heat transfer to molten, in turbulent pipe flow, 6: 1200(R)
Bitter Creek Group (Colorado)
uraniferous clays in, occurrence and analysis of, 6: 1458
Blood
analysis of, for polyglucose, 6: 1652
dialysis of, as related to survival after lethal doses of x-radiation, 6: 1378
Li content of, 6: 16(J), 17(J)
Blood cells
(See also Erythrocytes.)
protection against radiation injuries of, by bone marrow injections, 6: 763
uptake of P^{32} by, effect of insulin on, 6: 790
Blood picture
effects of radiation on, 6: 1599
Blood plasma
alkaline phosphatase level of, effect of aurintricarboxylic acid on, 6: 1616
effects of total body x-radiation and surgical trauma on polysaccharide and and sulfhydryl levels in, 6: 1594
exchange of K of, with K of body tissues in rats, 6: 1110
ferritin determination in, 6: 1600
potassium exchange rate in, of rabbit, 6: 1111

Blood plasma (cont'd.)
sulfhydryl content of, as affected by radiation and surgical trauma, 6: 1593
Blood plasma substitutes
(See also specific substitutes, e.g., Dextran.)
polyglucose, in shock treatment, 6: 1652
preparation of, 6: 163
tissue distribution of, 6: 1115
toxicology of tapioca dextrin, 6: 1617
Blood transfusions
effects on tumors, 6: 65(J)
radiosensitivity effects on dogs, 6: 516(R)
Blood vessels
(See also Capillaries.)
vasodepression of, by ferritin following irradiation, 6: 1600
Blood volume
measurement of, in organs of rats, 6: 765
Blue Jay Mine (Colorado)
uranothorite in, occurrence and identification of, 6: 1453
Body fluids
(See also Blood; Lymph.)
radiometric analysis of, 6: 1116
volumetric determination of, 6: 529
Boiling
effects on heat transfer, 6: 1443
heat transfer, 6: 871(J)
rate of, in liquids under free convection, 6: 872(J)
Bolometers
(See also Thermometry.)
response of, when subjected to modulated radiation, 6: 1787(J)
Bonds
(See also as subheading under specific compounds.)
hydrogen isotope effect on, in crystals, 6: 550(J)
Bone marrow
radiosensitivity effects of injections of, 6: 57(J), 763
Bone tumors
induced by Ra, 6: 787
Bones
(See also Hematopoietic system.)
alkaline phosphatase activity of, effects of α-particles on, 6: 28
calcification of, effects of phosphates on, 6: 21(J)
density of, radiographic measurement of, 6: 60(J)
deposition of Am, Ca, Pm, Pu, and Sr in, 6: 1389
deposition of Ga ion in, 6: 494
deposition of Ra, Ca, and Pu in, 6: 526(R)
deposition of Ra in, 6: 63(J)
exchange reactions of carbonate in, 6: 1609
from Florida phosphate deposits, comparison with Recent bone, 6: 764
incorporation of phosphate into, mechanism of, 6: 22(J)
Boron
colorimetric determination of, in Al, 6: 1140(J)
addition of, to aluminum alloy castings for grain refinement, 6: 1253(J)
ion exchange determination of, 6: 1406(J)
spectrophotometric determination of, 6: 1655
Boron carbides
high-temperature reactions of, with metals, 6: 1216
reactions of, with titanium carbide above 1920°, 6: 208(J)
thermal conductivity of, 6: 915
Boron chlorides
molecular structure of, 6: 136
Boron compounds
detection of thermal neutrons with, dissolved in liquid scintillators, 6: 1286
Boron fluorides
vibrational spectra of solid crystalline, 6: 1666(J)
Boron hydrides
(Covering boranes (B_2H_6, etc.) metal borohydrides, etc.)
electron-diffraction analysis of, 6: 108(R)
molecular structure of, 6: 136
Boron isotopes B^{10}
deuteron bombardment of, γ-rays from 6: 440(J)
deuteron bombardment of, internal pairs from, 6: 1009(J)
π^0 mesons from, by proton reactions, 6: 670
neutron reactions $(n,\alpha)Li^7(\gamma)Li^7$, 6: 493(J)
photodisintegration of, 6: 371(J)
Boron isotopes B^{11}
deuteron bombardment of, γ rays, 6: 440(J),
energy levels of, 6: 1010(J)
gamma emission from, 6: 1009(J)
π^0 mesons from, by proton reactions, 6: 670
Boron isotopes B^{11} (cont'd.)
nuclear magnetic moments of, 6: 995(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
Boron isotopes B^{12}
energy levels of, 6: 1010(J)
Boron trifluorides
analysis of, 6: 639
infrared absorption spectra of, 6: 155
preparation and analysis of, for neutron detection, 6: 639
Borosilicate glass
color centers in irradiated, 6: 1419(J)
Boundary layer
flow of, near a stagnation point, 6: 1716(J)
Brain
effects of x radiation on, 6: 42(J)
Brass
(See also Copper–zinc alloys.)
annealing textures in rolled, 6: 1242(J)
cathodic sputtering of, 6: 252
etching, metallography, and phase studies of, 6: 1469(R)
porosity of, metallographic studies on, 6: 1474
proton reactions (p,n), 6: 1535, 1859
rolling textures in, 6: 1245(J)
Brass–copper couples
porosity of, metallographic studies on, 6: 1474
Brass single crystals
slip in, delay time for the initiation of, 6: 1742(J)
Breeder Reactors
AEC program for, lecture on, 6: 1318
Bremsstrahlung
angular correlations of, with β particles, 6: 688(J)
angular distribution of, from proton reactions, 6: 337
cross section for emission of, calculation, 6: 1563(J)
effects of electron scattering on, in thin anticathodes, 6: 1890(J)
formation of V^0 particles by, on C and Pb, 6: 1872(J)
reactions with Cl, $Cu(\gamma,dp)$, 6: 1531
spatial distribution of, effect of electron scattering on, 6: 1889(J)
Bromine
neutron and proton charge-exchange reactions in, 6: 1881(J)
photoelectron emission from, 6: 1295(J)
proton scattering cross sections of, 6: 1546
Bromine complexes
equilibrium constants of, 6: 535
Bromine isotopes Br^{79}
nuclear electric moments of, 6: 988(J)
Bromine isotopes Br^{80}
gamma spectra of, 6: 1304(R)
production and enrichment of, 6: 1698
retention of, in complex bromides following isomeric transition, 6: 139(J)
Bromine isotopes Br^{81}
deuteron (d,p) cross sections, 6: 1015(J)
nuclear electric moments of, 6: 988(J)
Bromine isotopes Br^{82}
from Br^{81} (d,p) and Se^{82} (d,2n), 6: 1015(J)
production and enrichment of, 6: 1698
Szilard-Chalmers enrichment of, 6: 1420(J)
Bromine pentafluorides
infrared and Raman spectra of, 6: 1668(J)
Bronze
(See also Copper–tin alloys.)
permeability of, by gas, 6: 1230(R)
Brookhaven National Lab.
meteorological studies at, 6: 677(R)
progress reports, 6: 492(R), 1552(R), 1746(R)
Brookhaven reactor
power recovery from, 6: 489, 490
Brookhaven synchrotron
design of, 6: 1883
testing of components of, 6: 1747
Burros
hematology of, 6: 504(R)
1,3-Butadiene (labeled)
synthesis of, 6: 1181(J)
Butadiene, diphenyl-
fluorescence of, α- or γ-induced, 6: 653(R)
Butane, monofluoro-2-trifluoromethyl-
molecular dipole moments of, 6: 131(J)
2,3-Butanedione peroxide
decomposition of, in acetic acid-2-C^{14}, 2: 854

1-Butanethiol
reaction with cyclobutene, hexafluoro-, 6: 1160(J)
2-Butanone, 3-hydroxy- (labeled)
synthesis of, 6: 174(J)
Butyric acid, α-bromo-
polarographic behavior of, 6: 538

Cadmium
crystal structure of, 6: 235(R)
electrolytic separation of, from V, 6: 90(R)
gravimetric determination of, using 2-(hydroxyphenyl)-, benzoxazole 6: 1654
x-ray spectra of, 6: 97(J)
Cadmium crystals
plastic deformation in, x-ray and micrographic study of, 6: 1255(J)
Cadmium–gold alloys
phase studies of, 6: 1238(R)
phase transformations and thermal expansion of, 6: 600(R)
Cadmium iodide crystals
dislocations and spiral growth of, 6: 1410(J)
Cadmium iodides
fluorescence of, effects of temperature and type of radiation on, 6: 301(J)
Cadmium isotopes Cd^{110}
internal conversion in, 6: 1919(J)
Cadmium isotopes Cd^{111}
energy levels of, 6: 1352(J)
excitation curve of, under neutron bombardment, 6: 407(R)
gamma rays from, angular correlations of, 6: 417(J)
nuclear magnetic moments of 247-kev level of, 6: 347(J)
Cadmium–magnesium alloys
entropy and specific heat of, 6: 1472(R)
heats of formation of, 6: 1480(J)
thermodynamic properties of formation of, 6: 1479(J)
Cadmium single crystals
x-ray asterisms from deformed, 6: 1254(J)
Cadmium thiocyanate complexes
polarographic study of, 6: 98(J)
Cadmium tungstate crystals
scintillation efficiency of, effects of pressure on, 6: 826
Cadmium zinc sulfides
fluorescence and conductivity of, 6: 653(R)
Calamity Mesa (Colorado)
uraniferous clays in, occurrence and analysis of, 6: 1458
Calcite
determination of, in carbonate-bearing apatites, 6: 1452
Calcium
bone deposition of, 6: 526(R), 1389
determination of, in Na metal, 6: 815
infrared spectra of, calculations, 6: 161(J)
spectrographic determination of, in organic solids, 6: 158
tissue distribution of, during histaminic shock, 6: 529
Calcium complexes
dissociation of, in aqueous solutions, 6: 564(J)
with fatty acids, formation constants of, 6: 77
Calcium fluorides
coloration and luminescence of, 6: 142(J)
effects of x radiation on photoelectric current in, 6: 1168(J)
Calcium iodides
scintillation properties of Tl-activated, 6: 1806(J)
Calcium isotopes Ca^{39}
beta spectra and half lives of, 6: 735
Calcium isotopes Ca^{40}
nuclear stability of, 6: 1314(J)
Calcium isotopes Ca^{42}
binding energy of, calculation, 6: 333(J)
mass of, 6: 991(J)
Calcium isotopes Ca^{43}
mass of, 6: 991(J)
Calcium isotopes Ca^{44}
mass of, 6: 991(J)
Calcium isotopes Ca^{45}
beta emission of, 6: 1511
Calcium isotopes Ca^{46}
mass of, 6: 991(J)
nuclear stability of, 6: 1314(J)
Calcium nitrates
distribution of, between water and 1-hexanol, 6: 102

Calibration
(See also as subheading.)
statistical methods in, 6: 951
Calorimeters
adiabatic, design of, 6: 868
for measuring heat capacity of corrosive liquids, 6: 1164(R)
sensitivity and theraml capactiy of, 6: 960(R)
Calutrons
charge materials for stable isotope separation, survey of, 6: 1791
Cameras
Buerger precession, 6: 617
gamma-ray pinhole, for tumor location, 6: 521
for low temperature work, 6: 244(J)
for use with Wilson cloud chambers, 6: 945(J)
Canadian reactors
(See NRX reactor.)
Cancer
(See Carcinomas, Sarcomas, and Tumors.)
Capillaries
(See also Blood vessels.)
fragility of, as a factor in anemia following irradiation, 6: 1599
permeability of, induced by radiation, 6: 25, 1598
Caproic acid, α-bromo-
polarographic behavior of, 6: 538
Caprylic acid, α-bromo-
polarographic behavior of, 6: 538
Carbamic acid, ethyl ester
protective action of, against x radiation, 6: 1386(J)
Carbazyl, picryl-N-amino-
paramagnetic resonance absorption of, 6: 1166
Carbohydrates
biosynthesis of, by ustilago zeae, 6: 759
ion exchange separation of, from plant extracts, 6: 101
metabolism of, effects of K on, 6: 758
Carbon
(See also Diamonds; Graphite.)
absorption of cosmic particles in, 6: 260(J)
absorption of cosmic photons in, 6: 258(J)
adsorption of A, N, and methanol on, 6: 1425(R)
adsorption of O on, as factor in combustion, 6: 1669(J)
coherent neutron scattering amplitude of, 6: 1903(J)
combustion and mounting techniques for radioactive, 6: 1650
combustion determination of, 6: 106, 592
corrosion of, by H_2O_2, 6: 240(J)
electron scattering by, 6: 1035(J)
energy spectra of protons scattered from, 6: 388, 1753
formation of V^0 particles by bremsstrahlung on, 6: 1872(J)
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
gamma reactions (γ,p), 6: 701
infrared spectra of, calculations, 6: 161)J)
interactions of π mesons with, 6: 1823(J)
$π^0$-mesons from, by photon reactions, 6: 317
metabolism of, as related to C^{14} radiotoxicology, 6: 1609
neutron and proton charge-exchange reactions in, 6: 1881(J)
neutron total cross sections for, 6: 1017(J), 1023(J), 1525, 1526
nuclear momentum distribution in, inferred from proton scattering, 6: 1841
penetrating showers produced in, by cosmic radiation, 6: 266(J)
proton reactions (p,n), 6: 370(J), 1887
proton reactions (p,$π^0$), 6: 1865
proton reactions (p,$π^0$), γ spectra from, 6: 362
proton scattering cross section of, 6: 1546
proton spectra of, 6: 1821(R)
ratio of, to P in photosynthesis intermediates, 6: 168
transition probabilities for diatomic, by dipole velocity operator, 6: 256
Carbon bromides
electric conductivity and molecular properties of, 6: 1415
Carbon chlorides
electric conductivity and molecular properties of, 6: 1415
Carbon dioxides
determination of, bibliography on, 6: 110
fixation of, in barley roots, 6: 1703
ionization potentials of, by mass spectrography, 6: 291(J)
metabolism of, in Scenedesmus, 6: 531
metabolism of, in x-irradiated dogs, 6: 510(R)
self diffusion in, at moderate pressures, 6: 934
self diffusion in, up to 150 atm pressure, 6: 801
thermo-osmosis of, through rubber, 6: 1776(J)
Carbon ion beams
electron pickup by, in nuclear emulsions, 6: 656

Carbon isotopes
determination of, in organic compounds, 6: 104
energy levels of α-particle models for, 6: 691(J)
equipment for estimating radioactive, 6: 663(J)
gamma spectra of, produced by the $B^{10}(p,n)$ reaction, 6: 1911
isotopic effect of, on decarboxylation of oxalic acid, 6: 832
relative abundance of, in nature, 6: 1793
Carbon isotopes C^{11}
energy levels of, 6: 987
formation of, by proton bombardment of Cu, 6: 700
gamma emission from, 6: 1009(J)
Carbon isotopes C^{12}
deuteron reactions (d,n), 6: 708(J)
energy levels of, 6: 699, 987
formation of, by N^{14} (d,α), 6: 1870(J)
gamma reactions (γ,3α), 6: 699, 709(J), 1331(J)
gamma reactions (γ,n), 6: 963, 1871(J)
gamma reactions (γ,n), resonances in, 6: 372(J)
mass of, 6: 991(J), 1793
π^- mesons from, by proton reactions, 6: 974
π^0 mesons from, by proton reactions, 6: 670
neutron reactions (n,p), 6: 1821(R)
photodisintegration of, 6: 1861
photodisintegration of, α,α correlations in, 6: 704(J)
proton bombardment of, 6: 376(J)
proton reactions (p,γ), 6: 1879(J)
proton reactions (p,pγ), 6: 1533
proton reactions (p,p'), γ spectrum from, 6: 1918(J)
shell model calculation of the photodisintegration of, into three α particles, 6: 1003
Carbon isotopes C^{13}
binding energy of, calculation, 6: 333(J)
neutron scattering cross sections of, 6: 1548
properties of energy states of, 6: 1859
proton capture cross sections of, 6: 1875(J)
proton reactions (p,n), excitation functions for, 6: 367(J), 1021(J)
radiometric determination of, 6: 1628
spectra of, isotope shifts in, 6: 445
Carbon isotopes C^{14}
determination of, in organic compounds, 6: 1408(J)
determination of, in relics, 6: 755(J)
isotopic chemical effects of, in biological systems, 6: 1387
isotopic chemical effects of, in decarboxylation of malonic acids, 6: 831
measurement of, with CO_2 ionization chambers, 6: 654
metabolism of, 6: 526(R)
nuclear properties of, 6: 1928
permissible limits of, for bone, 6: 1609
proton reactions (p,n), 6: 407(R)
Carbon monoxides
oxidation of, over CuO^{18}, 6: 177(J)
Carbon steel
cerium impregnation of surface layers of, 6: 912(J)
Carbonates
bone turnover of, as affected by age, growth, body size, duration of exposure to CO_2, and ambient CO_2 concentration, 6: 1609
Carbonium compounds
carbonium ion rearrangements, 6: 1533
Carbonyl sulfides
microwave spectra of isotopic, 6: 340(J)
Carcinogens
(See also specific carcinogens; see also Carcinomas.)
effects of deuteron bombardment on, 6: 1170(J)
Carcinomas
(See also specific carcinomas, organs, tissues, animals, etc.; see also Carcinogens and Sarcomas.)
growth rate of mammary, before and after irradiation, 6: 1091(J)
radiotherapy of, with I^{131}, 6: 68(J)
radiotherapy of, with Co^{60}, 6: 1105(J)
Caribou Mine (Colorado)
uranium occurrence at, 6: 213
Carnegie Inst. of Tech.
progress reports, 6: 597(R)
Carnotite ores
(See also Uranium ores.)
detection of, by α-particle emission from drill cores, 6: 211
Carotenoids
occurrence in blue-green algae, 6: 14
Case Inst. of Tech.
progress reports, 6: 680(R)
Casy Lease (Colorado)
prospecting of, for U, 6: 1456
Catalases
inactivation of, by fast deuterons, heat, and a combination of the two, 6: 1602(J)
Catalysis
mechanism of, of oxidation of CO, 6: 177(J)
Cataracts
radioinduced, in mice, 6: 506(R), 763
radioinduced, in rabbits, 6: 505
Cathode-ray tubes
calibration unit for, 6: 1579(P)
in color television, 6: 1834
Cathodes
(See also Electrodes; Electron tubes; Electrons—emission; Mercury cathodes.)
sputtering of metal from, for micro-diffusion studies, 6: 252
Cavity resonators
spheroidal, resonance of small spheroidal object in, 6: 253
Cells
(See Animal cells; Cytology; Dry batteries; Plant cells.)
Cellulose
effects of radiation on, 6: 493(J)
Cements
(See also Mortars.)
corrosion of, by H_2O_2, 6: 240(J)
properties of, 6: 1437
Centrifugal pumps
Hayward-Tyler, cleaning of, 6: 1443
Ceramic coatings
(See also subheadings under base materials and units being coated.)
testing of, for wet exhaust mufflers and piping, 6: 203
Ceramic materials
(See also Refractory materials.)
dielectric properties of, measured by electromagnetic resonators, 6: 1493
interactions of, with metals at high temperatures, 6: 205
Ceramic-metal couples
interfacial reactions of, 6: 1449(R)
Cerium
fractional-precipitation separation of, from La, 6: 1174(J)
impregnation of steel with, 6: 912(J)
production of, by electrolytic and thermal reduction processes, 6: 1688(J)
thermodynamic properties of, 6: 560, 840
Cerium chlorides
activity coefficients, conductances, and transference numbers of, 6: 562
activity coefficients of, in aqueous solutions, 6: 558
thermodynamic properties of, 6: 560, 839
transference numbers of, 6: 563
Cerium compounds
thermodynamic properties of, 6: 840
Cerium ions
oxidation and reduction of, by radiation, 6: 146(J)
Cerium isotopes Ce^{140}
preparation of carrier-free, 6: 1422
spins of excited states of, from La^{140} β decay, 6: 1917(J)
Cerium isotopes Ce^{141}
decay schemes of, 6: 424(J)
Cerium oxalates
thermodynamic properties of, 6: 560
Cerium oxide-praseodymium oxide systems
reduction of, by H_2, 6: 1683(J)
Cerium oxide-thorium oxide systems
reduction of, by H_2, 6: 1683(J)
Cerium oxides
reduction of, by H_2, 6: 1683(J)
Cerium(III) sulfate complexes
dissociation constant of, 6: 1682
Cerium sulfates
paramagnetic resonance absorption in, 6: 1359(J)
Cermets
sintering of, equipment for studying, 6: 205
Cesium
chromatographic separation of, from Rb and K, 6: 848(J)
Cesium iodides
scintillation properties of Tl-activated, 6: 1806(J)
Cesium isotopes
nuclear properties of, 6: 1928
Cesium isotopes Cs^{134}
decay schemes of, 6: 689(J)
gamma emission from, polarization and angular correlation of, 6: 430(J)
nuclear spin of, 6: 1909

Cesium isotopes Cs^{134} (cont'd.)
preparation of carrier-free, 6: 1422
spectra of, 6: 742(J)
Cesium isotopes Cs^{135}
preparation of carrier-free, 6: 1422
Cesium isotopes Ca^{136}
yield and half lives of, from U^{233} and U^{235} fission, 6: 1857
Cesium vanadium sulfates
absorption spectra of, 6: 1647(J)
Chain reactions
(General theory of nuclear chain reactions; see also specific fissionable isotopes; see also Criticality studies; Multiplication factor; and Reactors—theory.)
production of first, at Univ. of Chicago, 6: 353
Chalk River reactor
(See NRX reactor.)
Chelates
chemical stability of, 6: 1632
toxicology of, 6: 496(R)
Chemical analysis
(See also specific methods of analysis.)
by measurement of nuclear magnetic resonance, 6: 1142(J)
Chemical radiation detectors
(See also Radiation detection instruments—colorimetric.)
calibration and performance of, 6: 1343
Chemical warfare
eddy-diffusion theory in relation to, 6: 756
meteorological aspects of, 6: 757
Chemical warfare agents
(See also specific agents.)
dispersal of, 6: 757
Cherenkov radiation
counter for measurement of, 6: 1512
detection and measurement of, 6: 299
from irradiated U in H_2O, 6: 1511
Chloride complexes
equilibrium constants of, 6: 535
Chlorides
fluorination of, with ammonium fluoride, 6: 133(J)
metabolism of, in x-irradiated dogs, 6: 510(R)
Chlorine
effects on incorporation of phosphate into lipides by liver slices, 6: 799
Chlorine isotopes Cl^{33}
beta spectra and half lives of, 6: 735
Chlorine isotopes Cl^{34}
gamma spectra of, 6: 1351(J)
Chlorine isotopes Cl^{35}
mass of, 6: 991(J)
nuclear magnetic moment and coupling constants of, 6: 1310(J)
nuclear quadrupole resonance lines of, theory, 6: 341(J)
quadrupole resonance of, in p-$C_6H_4Cl_2$, 6: 692(J)
quadrupole spectra and couplings of, in substituted methanes, 6: 1308(J)
Chlorine isotopes Cl^{36}
blackening of photographic plates by β particles from, 6: 1287
nuclear properties of, 6: 1928
Chlorine isotopes Cl^{37}
mass of, 6: 991(J)
nuclear magnetic moment and coupling constants of, 6: 1310(J)
proton reactions (p,n), 6: 407(R)
proton reactions (p,n), excitation functions for, 6: 1021(J)
quadrupole resonance of, in p-$C_6H_4Cl_2$, 6: 692(J)
Chlorine isotopes Cl^{38}
in reducing ascites, 6: 1595
Chlorohydrocarbons
(See also Halohydrocarbons.)
fluorination of, with SbF_3, 6: 1664(J)
Chloroörganic compounds
(See also specific organic compounds; see also Halohydrocarbons.)
proton stopping by, 6: 718
Chlorophylls
absorption spectra of, 6: 159
occurrence in blue-green algae, 6: 14
role of, in "Hill reaction," 6: 498
Chloroplasts
back reaction in photolysis of H_2O by, 6: 567
evolution of O_2 by isolated, 6: 534
luminescence of, potentiometric measurement, 6: 1601(J)
Cholanthrene
changes in chemical properties of, after irradiation, 6: 1170(J)
Cholesterol
changes in chemical properties of, after irradiation, 6: 1170(J)
metabolism of, 6: 497(R)
Cholesterol (labeled)
biosynthesis of, by liver slices, 6: 174(J)
Chromium
by-product recovery of, from titaniferous magnetite, 6: 911(J)
freezing point of, 6: 1259(J)
neutron cross sections of, 6: 1304(R), 1526
polarographic determination of, in Al alloys, 6: 1407(J)
scattering of neutrons by, 6: 980
Chromium alloys
sigma phase in, 6: 1246(J)
Chromium-aluminum compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Chromium–cobalt–iron–nickel alloys
creep properties of, effects of cold-work on, 6: 1207
Chromium–iron alloys
corrosion of, by liquid Bi, 6: 900
Chromium isotopes Cr^{48}
formation of, in Fe spallation, 6: 1862
Chromium isotopes Cr^{51}
decay schemes of, 6: 650(R)
Chromium isotopes Cr^{52}
binding energy of, 6: 989(J)
Chromium isotopes Cr^{53}
proton reactions (p,n), 6: 359, 407(R)
Chromium isotopes Cr^{54}
proton reactions,(p,n), 6: 359, 407(R)
Chromium–manganese alloys
phase studies of, 6: 1259(J)
Chromium–niobium alloys
crystal structure of, from x-ray-diffraction data, 6: 1249(J)
Chromium–tantalum alloys
crystal structure of, from x-ray-diffraction data, 6: 1249(J)
Chromium–uranium alloys
crystal structure of, 6: 121(J)
crystal structure of β phase, 6: 1183
magnetic susceptibility of, 6: 1433
Chromium–zirconium alloys
constitution diagrams of, 6: 591(R)
Chromosomes
(See also Genetics and Mitosis.)
effects of O_2 on x-ray induced aberrations in, 6: 24
effects of radiation on, 6: 39(J), 769(J)
x- and γ-ray-induced aberrations in, effects of infrared radiation on, 6: 27
x- and γ-ray-induced and O_2-induced aberrations in, 6: 4
x-ray-induced aberrations in, effects of O_2 and temperature in, 6: 28
Chymotrypsin
protection by competitive inhibitors against radiatic n damage of, 6: 1094
Circulatory diseases
(See also Blood vessels.)
chemotherapy of, 6: 497(R)
Clay deposits (uraniferous)
uranium occurrence in, 6: 1728(J)
Clays (uraniferous)
occurrence and analysis of, from Dyamite Mine, Bitter Creek Group, Montrose Co., and Calamity Mesa, Mesa Co., Colorado, 6: 1458
Cloud chambers
camera for use with, 6: 945(J)
continuously sensitive, design of, 6: 664(J)
for cosmic radiation detection, 6: 962(R)
high pressure diffusion, design of, 6: 316
timing apparatus for, 6: 478(P)
Cloud-ion chambers
design and operation of, 6: 1815(J)
Cobalt
anion exchange of, in HCl, 6: 1689(J)
neutron diffraction pattern for, 6: 1038(J)
Cobalt alloys
corrosion of, by liquid Bi, 6: 900
Cobalt(II) chlorides
solvation of, in water and acetone, 6: 78
Cobalt(II) fluorides
neutron diffraction analysis of, 6: 1548
Cobalt–chromium–iron–nickel alloys
creep properties of, effects of cold-work on, 6: 1207
Cobalt complexes
dissociation of, in aqueous solutions, 6: 564(J)
magnetic properties of, 6: 1628
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)

Cobalt–iron alloys
recrystallization of, effects of, magnetic field on, 6: 601(R)
Cobalt isotopes Co^{59}
deuteron reactions (d,2p)Fe^{59}, 6: 1790
mass of, 6: 368(J)
proton reactions (p,n), threshold of, 6: 368(J)
Cobalt isotopes Co^{60}
decay schemes of, 6: 650(R)
gamma emission from, anisotropy of, 6: 997(J)
gamma emission from, polarization and angular correlation of, 6: 430 430(J)
gamma-gamma angular correlation in, 6: 1913(J)
half lives of, measured by differential ionization method, 6: 1357(J)
internal conversion and isomeric transition of, 6: 409
mixture with plastics for use in radiotherapy, 6: 1107(J)
polarization of γ rays from, by double scattering, 6: 1898(J)
preparation and use of radiotherapy units of, 6: 1102(J)
in treatment of non-resectable head and neck cancer, 6: 1103(J)
in treatment of uterine carcinomas, 6: 1105(J)
unit for cancer therapy with, at Univ. Hospital, Saskatoon, Canada, 6: 786(J)
Cobalt isotopes Co^{61}
decay schemes of, 6: 1354(J)
from Cu^{63} (γ,α), 6: 1012(J)
Cobalt nitrates
distribution of, between water and 1-hexanol, 6: 102
electric conductivity of, in acetophenone, 6: 84
Cobalt-uranium alloys
of composition UCo_2, 6: 471(P)
magnetic susceptibility of, 6: 1433
Cobalt-uranium compounds (intermetallic)
of composition U_6Co, 6: 472(P)
Cockcroft-Walton accelerators
for acceleration of H^3 and He^3 ions, 6: 1886(J)
Coincidence circuits
(Circuits peculiar to specific instruments are indexed with the instruments.)
for cosmic radiation detection, 6: 610(R)
design of, 6: 634(J)
in fluorescence and conductivity studies, 6: 1392(R)
multiple channel, design of, 6: 297
pulse-equalizing, for scintillation counters, 6: 1798
radio telemetering in, 6: 1265(J)
Colchicine
effects of x radiation and, on cells, 6: 36
Colitis
fecal lysozyme titer in, effect of ACTH on, 6: 9
Collagen
effects of radiation on, 6: 493(J)
College of Sciences and Arts, State Coll. of Wash.
progress reports, 6: 535(R)
Colorado (Boulder County)
exploration of Caribou Mine area, 6: 213
uranothorite in Blue Jay Mine, occurrence and identification of, 6: 1453
Colorado (Clear Creek County)
prospecting of Robineau Claims, 6: 214
Colorado (Larimer Co.)
geology and prospecting of Case Lease, Treasure Hill Area, Treasure Hill Claims, and West Point Claim for U, 6: 1456
Colorado (Mesa Co.)
uraniferous clays in, occurrence and analysis of, 6: 1458
Colorado (Montrose Co.)
uraniferous clays in, occurrence and analysis of, 6: 1458
Colorado Plateau
6: 891(R)
Columbia Radiation Lab., Columbia Univ.
progress reports, 6: 1782(R)
Columbia River
radioactive plankton from, 6: 513
Columbia Univ.
progress reports, 6: 600(R), 1304(R), 1469(R)
Columbia Univ. School of Mines
progress reports, 6: 1173(R), 1238(R)
Communication systems
theory of, 6: 1750(R)
Computers
(Calculating devices; mechanical and electrical. See also Reactor simulators.)
design and operation of, 6: 939, 940, 1750(R)
an FM-AM multiplier, design and performance of, 6: 1781
line divider as an aid in calculating graphs, design of, 6: 1784
Concrete aggregates
(See also specific materials used as aggregates.)
preparation of high-density, using pressure grouting and other methods, 6: 1437
Concretes
(See also Cements.)
corrosion of, by H_2O_2, 6: 240(J)
polyethylene coatings for, specifications, equipment and methods of application of, 6: 1724
preparation of high-density, using pressure grouting and other methods, 6: 1437
properties and preparation of, using pumice as aggregate, 6: 1206
Congo ores
(See Pitchblende.)
Constants and conversion factors
(Includes only miscellaneous constants not covered specifically elsewhere.)
for pile engineering, 6: 1482
Contamination
(See also Radioactive contamination.)
mathematical analysis of diffusion of, from a single source, 6: 1442
measurement of, in vacuum systems, 6: 1804(J)
Convection
(See also Heat transfer.)
equation of thermal, 6: 623(J)
magneto-hydrodynamic effects on, in a magnetic field, 6: 1715(J)
Convection (forced)
effects on effectiveness of heaters, 6: 581(J)
heat transfer, 6: 871(J)
heat transfer by, in Pt tubes, 6: 867
at high velocities and temperatures, measurement of, 6: 1717(J)
Convection (free)
heat transfer, 6: 873(J)
rate of boiling of liquids under, 6: 872(J)
Conversion electrons
(See also subheading beta emission under specific isotopes; see also Beta particles.)
angular correlation between, and other cascade radiation, 6: 1844(J)
Copper
annealing textures in rolled, 6: 1242(J)
bremsstrahlung reactions (γ,dp), cloud chamber identification of, 6: 1531
cathodic sputtering of, 6: 252
corrosion of, by H_2O_2, 6: 240(J)
creep of, under deuteron bombardment, 6: 893
determination of, by pile activation, 6: 549(J)
deuteron range-energy relation in, 6: 1032(J)
dynamic coefficients of, 6: 245(J)
electric conductivity of, effect of elastic deformation in, 6: 241(J)
electrolytic separation and determination of, 6: 1138(J)
electron scattering by, 6: 1035(J)
electroplating of, 6: 599(R)
extinction in, 6: 605(J)
gamma absorption in, 6: 1533
gamma reaction (γ,n) at 320 and 160 Mev, 6: 1538
gamma reactions (γ,p) and (γ,d), 6: 1532
grain growth in, 6: 230
meson scattering cross sections, 6: 319
π^--meson scattering cross sections, 6: 319
π^0-mesons from, by photon reactions, 6: 317
metabolism of, in Drosophila, 6: 1114
neutron cross sections of, 6: 1526
neutron scattering cross sections of, 6: 1304(R)
oxidation rate of, as function of temperature and pressure, 6: 896
penetrating cosmic showers in, 6: 1757(J)
proton bombardment of, distribution of products of, 6: 360
proton bombardment of, formation of light nuclei by, 6: 700
rolling textures in, 6: 1245(J)
scattering of neutrons by, 6: 980
tissue distribution of, in Drosophila larvae, 6: 1595
Copper alloys
(See also Brass and Bronze.)
corrosion of, by H_2O_2, 6: 240(J)
Copper-aluminum alloys
aging of, x-ray-diffraction study of, 6: 244(J)
Copper-aluminum compounds (intermetallic)
crystal structure of, 6: 827(J)
Copper–aluminum–magnesium alloys
aging of, x-ray-diffraction study, 6: 244(J)
constitution diagrams of, 6: 243(J)

Copper-brass couples
porosity of, metallographic studies on, 6: 1474
Copper chlorides
catalysis of ascorbic acid oxidation by, 6: 803
Copper coatings
thickness measurements of, on cylinders by x-ray-diffraction analysis, 6: 1486
Copper complexes
with cyanide, in oxidation-reduction reactions, 6: 813
dissociation of, in aqueous solutions, 6: 564
equilibrium constants of, 6: 535
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
spectrophotometric studies of, 6: 1393(R)
Copper compounds
chelation of, with β-diketones, 6: 1634
paramagnetic resonance and hfs of divalent, 6: 1847(J)
Copper electrodes
electric breakdown between, effect of surface treatment on, 6: 271
Copper–gold alloys
electric conductivity of, effects of radiation on, 6: 493(J)
ordering kinetics in, 6: 115
Copper ions
inhibition of Ti corrosion by, 6: 588
Copper isotopes Cu^{62}
production of, in betatron, 6: 279(J)
Copper isotopes Cu^{63}
gamma reactions (γ,n), 6: 1871(J)
nuclear electric moments of, 6: 1309(J)
triton reactions of, 6: 705(J)
Copper isotopes Cu^{65}
gamma (γ,α) cross sections, 6: 1012(J), 1861
gamma reactions (γ,n), 6: 1871(J)
nuclear electric moments of, 6: 1309(J)
triton reactions of, 6: 705(J)
Copper isotopes Cu^{66}
gamma spectra, 6: 1923(J)
nuclear spin and decay of, 6: 1051(J)
Copper–nickel alloys
diffusion in, 6: 603(R)
Copper-nickel couples
porosity of, metallographic studies, 6: 1474
Copper–nickel–zinc alloys
casting, corrosion, and physical properties of, 6: 1465
Copper–silicon alloys
plastic deformation of, 6: 618(R)
Copper-silicon single crystals
plastic deformation of, 6: 1470(R)
Copper single crystals
plastic deformation of, 6: 618(R), 1470(R)
plastic flow in, 6: 603(R)
Copper–tin alloys
(See also Bronze.)
phase studies of, 6: 1238(R)
phase transformations in, 6: 600(R)
Copper–zinc alloys
(See also Brass.)
diffusion in, 6: 603(R)
grain boundary diffusion in, 6: 1473(R)
Copper-zinc couples
diffusion of Zn in, 6: 601(R)
Copper–zirconium alloys
constitution diagrams of, 6: 591(R)
Cornell Univ.
progress reports, 6: 108(R)
Corrosion
(See also subheadings corrosion under corroded materials and units, and corrosive effects under corrosive agents.)
symposium on, minutes of, 6: 210
testing equipment, 6: 234
Corrosion inhibitors
efficiency of Fe and Cu ions as, 6: 588
properties of, for use on ball bearings, 6: 1218
Cortisone
radiosensitivity effects on chicks, 6: 763
Cosmic electrons
detection of, counter arrangement for, 6: 924
energy of, 6: 613(J)
energy spectrum of, by absorption in Al and Pb, 6: 262(J)
measurement of, multitelescope and hodoscope unit for, 6: 923
scarcity of primary, 6: 927(J)
Cosmic mesons
differential range intensity and momentum distribution of, 6: 929(J)
neutrons produced by capture of μ, in Pb, 6: 1759(J)
probability of production of showers of, 6: 926(J)
production and energy distribution of π and μ, and relation to primary-nucleon spectrum, 6: 1762(J)
zenithal variation of, 6: 1299(J), 1763(J)
Cosmic neutrons
latitudinal variations in intensity of, 6: 268(J)
production of stars and single tracks by, in nuclear emulsions, 6: 1267(J)
Cosmic particles
(See also headings by name, e.g., Cosmic electrons; see also Electrons; Mesons, etc.)
absorption of, in H_2 and C, 6: 260(J)
charge on primary, 6: 1512
electron-nuclear shower producing, disintegration of, 6: 263(J)
high-energy disintegrations initiated in nuclear emulsions by primary, 6: 1761(J).
identification of, in nuclear emulsions, 6: 1289(J)
measurement of, by pulse ionization chamber, 6: 928(J)
multiple meson production by, in H_2, 6: 267(J)
stars produced in AgCl by ionizing, 6: 1760(J)
Cosmic protons
momentum distribution of, 6: 269(J), 929(J)
star production by, in nuclear emulsions, 6: 611(J)
Cosmic radiation
(See also specific particles identified with cosmic radiation, e.g., Cosmic neutrons.)
absorption in atmosphere, measurement of, 6: 1268(J)
absorption of photons in, in Pb, Sn, Fe, Al, C, and paraffin, 6: 258(J)
associated penetrating particles of, underground, 6: 257(J)
biological effects of, evaluation of present day knowledge, 6: 1596
counting of, a combinatorial problem in, 6: 615(J)
deduction of spectrum of primary nucleons of, from μ-meson spectrum, 6: 1762(J)
detection and measurement of, spark counters for, 6: 969(J)
dosage of, at high altitudes, 6: 497(R)
east-west asymmetry of, equipment for measuring, 6: 610(R)
effects of solar activity on, 6: 1767(J)
gamma components of, 6: 612(J)
high-energy interaction in, emulsion cloud chamber study of, 6: 925
high-energy primary flux of, detection and measurement of, 6: 1489
intensity of heavy primaries in, 6: 928(J)
ionizing power of, at sea level, 6: 1764
latitudinal variations in intensity of, 6: 930(J)
meson-proton analysis of, 6: 929(J)
nuclear disintegrations caused by, features of, 6: 1766(J)
origin of, theory, 6: 722(J), 927(J)
penetrating non-ionizing component of, 6: 614(J)
penetrating showers produced by, in Be, 6: 265(J)
penetrating showers produced by, in Pb and C, 6: 266(J)
photographic emulsion study of cascades in, 6: 1765(J)
primary specific ionization of, in H_2, 6: 1758(J)
spectrum of ionizing particles of, 6: 261(J)
star production by, diurnal variation in rate of, 6: 1266(J)
star production by, in nuclear emulsions, 6: 259(J), 1819
transition effect of star-producing, 6: 1269(J)
underground, effects of atmospheric temperature variation in, 6: 1756
zenithal variation of, 6: 1763(J)
Cosmic showers
density of, 6: 613(J)
density, distribution, and detection probabilities of, 6: 924
detection and measurement of, cloud chamber for, 6: 962(R)
electron-nuclear process in, 6: 1270(J)
photons and electrons in, numbers of, 6: 616(J)
probability of production of, 6: 926(J)
production of penetrating, in Cu, 6: 1757(J)
radio telemetering in detection of, 6: 1265(J)
ratio of penetrating particles to electrons in, 6: 270(J)
Counting devices
(See also Radiation detection instruments; Radiation detectors.)
for cosmic radiation, 6: 969(J)
electromagnetic, design of, 6: 487(P)
Couples (metallurgy)
(See also headings for specific couples by name of components.)
porosity,of, metallographic studies on, 6: 1474
Creatinephosphoric acid
fluorimetric analysis of, 6: 1134

Creep
(See also as subheading under specific materials.)
testing of, instrumentation for, 6: 192
Criticality studies
(Studies of mass, dimensions, etc., for nuclear critical assemblies; see also criticality studies under specific reactors and under Reactors; also specific fissionable isotopes.)
formula for safe mass in a reactor, 6: 354
Crotonaldehyde (labeled)
synthesis of, 6: 174(J)
Cryogenics
6: 1750(R)
bibliographies on, 6: 1484
monograph on, 6: 1484
production of low temperatures by demagnetization, 6: 255(J)
thermometers for use in, 6: 1280(J)
Cryolite
infrared spectrum and crystal structure of, 6: 1667(J)
Crystal detectors
(See also Scintillation detectors.)
design of, 6: 1506(R)
for in vivo use, 6: 657(R)
for quantitative biological measurement, development of, 6: 763
Crystal structure
(Including crystal imperfections, lattice distortion, crystal deformatoin, orientation, superlattices, etc.; see also as subheading under specific materials; see also interfaces; preferred orientation; slip; twins; etc., as subheadings under specific materials.)
determination of, from neutron diffraction data, 6: 619(J)
effects on neutron transmission, 6: 1341
hydrogen isotope effect on, 6: 550(J)
measurement of, at low temperatures, 6: 617
Crystals
(See also specific materials and subheadings covering crystal phenomena; and main headings by material, e.g., Copper crystals; see also Single crystals.)
hydrogen isotope effect on bonds in, 6: 550(J)
plastic deformation of, theory of, 6: 1660
Curare alkaloids (labeled)
synthesis of, 6: 570(J)
Curium isotopes
formation of, 6: 917
Curium isotopes Cm^{240}
decay schemes of, 6: 917
Curium isotopes Cm^{241}
electron capture of, 6: 917
Curium isotopes Cm^{242}
alpha emission of, measurement, 6: 1481
alpha spectra of, 6: 415
decay schemes of, 6: 917
Current integrators
(See also Electrometers.)
design of, 6: 1276(R)
Cyanide complexes
with copper, in oxidation-reduction reactions, 6: 813
Cyanide ions
exchange studies, kinetics of, 6: 1123(J)
Cyanides
exchange reactions of, with thiocyanate ions, 6: 87
fluorination of, 6: 134(J)
radiosensitivity effects of, 6: 51(J), 520(R)
Cyclobutene, hexafluoro-
reaction of, with 1-butanethiol, 6: 1160(J)
Cyclohexane
chemical effects of α particles on, 6: 1421(J)
radiolysis of, effect of I in, 6: 1674
Cyclohexane, γ-hexachloro-
effects of x radiation on, in alcoholic solution, 6: 1169
Cyclohexene
chemical effects of α particles on, 6: 1421(J)
Cyclone precipitators
efficiency of, effect of dust concentration on, 6: 189(J)
Cyclotrons
(Including F. M. cyclotrons or synchro-cyclotrons.)
acceleration of multiply charged nuclei in, 6: 379
beam collimation of, 6: 1328(J)
beam deflection in, regenerative, 6: 1336(J)
beam deflection in synchro-, 6: 356(J)
notes on a tour of American, and bibliography on, 6: 1024
operation of 60 in., 6: 1821(R)
orbit problems in, 6: 378, 1821(R)
Cyclotrons (cont'd.)
oscillator design for Argonne 60-in., 6: 1324
stabilization of magnetic field of, 6: 1542(J)
synchro-, design and beam characteristics of, 6: 1883
temperature reduction of, by cleaning magnet heat exchanger, 6: 276(R)
theory of fixed frequency, 6: 1882
trochoidal orbits in, 6: 1025(J)
Cylinders
heat emission by, in liquids and gases, 6: 1202(J)
heat transfer in infinitely long concentric, theory, 6: 869
heat transfer in split hollow, 6: 1710
transient temperature and thermal stress in infinitely long, 6: 870
Cysteine
effects on radiosensitivity of tumor cells, 6: 1608
radiosensitivity effects of, 6: 520(R), 1379(R), 1386(J)
Cytochemistry
application of, in analysis of elements by x-rays, 6: 1101(J)
Cytology
spectrophotometric methods for study of the cell nucleus, 6: 1374
Cytoplasm
analysis of, for ribonucleotides, 6: 112(J)

Decontamination
(See also as subheading under units and materials decontaminated; also as unit operation under specific chemical processes; for studies on the use of special coatings to aid decontamination, see also Coatings and specific coatings, e.g., Paint and Silicone coatings.)
of surfaces, 6: 469(P)
Density
(Including specific gravity; see also as subheading under specific materials.)
measurement of, by gamma absorption, 6: 937
Deuterium
(See also Deuterons.)
determination of, by 5 methods, 6: 822(J)
determination of, in organic compounds, 6: 104
deuteron and triton cross sections,of, 6: 1859
deuteron cross sections of, 6: 1528
deuteron scattering by and deuteron reactions (d,p) of, 6: 1330(J)
dissociation of, by high-energy γ rays, 6: 703
effects on solvolytic reactions, 6: 1533
energy spectra of protons scattered from, 6: 388, 1753
exchange of, between D_2O and heptane, 6: 122(J)
gamma cross sections of, 6: 1863
gamma reactions (γ,n), yield and energy of neutrons from, 6: 1829
gamma reactions (γ,p), 6: 680(R)
inelastic scattering of neutrons by, 6: 1031(J)
mass spectrographic determination of, in H-D mixtures, 6: 547
π meson scattering cross sections of, 6: 1818
π^- mesons from, by photon reactions, 6: 321, 323, 671, 1005
π^0 mesons from, by photon reactions, 6: 975
π^0 mesons from, by proton reactions, 6: 670, 973
neutron reactions (n,p), 6: 361, 716
neutron total cross sections of, 6: 1525
nuclear magnetic moments of, 6: 995(J)
nuclear momentum distribution in, inferred from proton scattering, 6: 1841
photodisintegration cross section of, and angular distribution of photoprotons from, 6: 1020(J)
photodisintegration of, 6: 702, 1861
pickup process in, 6: 687
production by electrolysis of heavy water, 6: 828(J)
production of thermo-nuclear reaction in, by high current spark discharge, 6: 1867(J)
proton elastic scattering by, impulse approximation, 6: 1896(J)
proton scattering cross sections of, 6: 1887
proton spectra of, 6: 1621(R)
radiometric determination of, 6: 1628
reaction kinetics of, with U metal, 6: 573
scattering of neutrons by, theory, 6: 720(J)
theory of molecular, in magnetic fields, 6: 1828(J)
triton cross sections of, 6: 1528
Deuterium compounds
vibration frequencies of, rules for, 6: 1417(J)
Deuterium hydrides
reaction kinetics of, with U metal, 6: 573
Deuterium-hydrogen systems
mass spectrographic analysis of, 6: 547
Deuterium-water systems
exchange reactions in, γ-ray induced, 6: 556

Deuteron scattering cross sections
theory of, 6: 1547
Deuterons
effects on semiconductors, 6: 557(J)
inelastic scattering of, 6: 1888(J)
meson reactions (φ^+,2p), 6: 328(J), 329(J)
nuclear forces in, 6: 1346(J)
photodisintegration of, 6: 1013(J)
photodisintegration of, angular distribution of protons in, 6: 1539(J)
photodissociation of, by high energy γ-rays, 6: 1866
ranges in metals and semiconductors, 6: 1032(J)
reactions of, stripping theory of, 6: 1859
relativistic equation for ground state of, using scalar mesons and scalar coupling, 6: 1937(J)
relativistic pseudoscalar meson theory of, 6: 747(J)
response of scintillation crystals to, 6: 966(J)
scattering of, by hydrogen, 6: 717
Dextran (labeled)
biosynthesis of, 6: 163, 568, 763
Dextrins
from tapioca, nutritional value as a blood plasma substitute, 6: 1617
Diabetes
glomerulosclerosis in, 6: 1074
Diamonds
(See also Crystal detectors.)
correlation of counting properties with optical properties of, 6: 1294(J)
crystal structure and electric properties of, 6: 967(J)
thermodynamic properties of, 6: 1239(R)
Dibenzanthracene
effects of radiation on chemical properties, 6: 1170(J)
Diborane, amino-
molecular structure of, 6: 136
Diborane, bromo-
molecular structure of, 6: 136
Diborane, 1,1-dimethyl-
molecular structure of, 6: 136
Diborane, dimethylamino-
molecular structure of, 6: 136
Diborane, tetramethyl-
molecular structure of, 6: 136
Dielectrics
(See also subheading dielectric properties under specific materials.)
current induced in, by electron bombardment, measurement of, 6: 1350(J)
Differential thermal analysis
tungsten-molybdenum thermocouple for, 6: 1259(J)
Diffusion
(See also as subheading under diffused materials and radiations.)
equation of, in binary alloys, 6: 1244(J)
through an interface, solution of equation for, 6: 800
mathematical analysis of, 6: 756, 953, 1442
meteorological aspects of, 6: 757, 979
β-Diketones
chelation of Ba, Cu, and Ni compounds by, 6: 1634
dissociation constants in water-dioxane solutions, 6: 1633
Dilatometers
development and operation of differential transformers for use as a sensitive element of, 6: 1780
Dioxane
fluorescence of, α- or γ-induced, 6: 653(R)
Disaccharides
ion exchange of, 6: 148
Distillation apparatus
design for diffusion-pump oil, 6: 880(J)
Dogs
radiosensitivity of, 6: 520(R)
Dow Chemical Co.
progress reports, 6: 228(R), 903(R)
Drosophila
autosomal lethals in, induced by x-radiation, 6: 8
barium and La metabolism in, 6: 503
copper metabolism in larvae of, 6: 1114
fluorescence in, as related genetically and biochemically to red eye pigment, 6: 767(J)
gynandromorphs in, induced by x radiation, 6: 773(J)
mutation of, induced by x radiation, 6: 770(J)
Dry batteries
design of Zamboni type, 6: 1279(R), 1789(J)
Dusts
(See also Aerosols.)
effects on turbulence of gas streams, 6: 189(J)
sampling equipment for, 6: 657(R)
Dyes
(See also specific dyes, e.g., Toluidine blue; see also classes of dyes, e.g., Phenazine dyes and Thiazine dyes.)
in plastics, effects of radiation on electronic processes in, 6: 835(J)
Dynamite Mine (Colorado)
uraniferous clays in, occurrence and analysis of, 6: 1458
Dysprosium isotopes
alpha emission from, 6: 410
Dysprosium isotopes Dy^{165}
internal conversion coefficients of, 6: 1555
isomers of, 6: 1555
Dysprosium isotopes Dy^{165}
isomeric transition of, 6: 409

Earth
age estimations of, 6: 922(J), 1755(J)
Egg yolks
chromatographic analysis of normal and x-irradiated, 6: 508
Eggs
effects of radiation on respiration and development of, 6: 1084
Elastomers
fluorinated, preparation and evaluation of oil-resistant, for use at low temperature, 6: 1701(R)
physical and shielding properties of, 6: 442
Electric arcs
(See also Gaseous ionization.)
control of electron current in, 6: 932(J)
design for crossed discharge, 6: 620
self-magnetic field in, 6: 1274(J)
theory of, 6: 1768
Electric control systems
for use during irradiation, design of, 6: 1281(J)
Electric currents
electronic device for measurement of small discharges, 6: 1577(P)
recording devices for, design of, 6: 1281(J)
Electric fields
(See also Magnetic fields.)
effects on heat transfer in liquids, 6: 1203(J)
measurement in a linear accelerator, 6: 377
Electric power
(Generation and transmission, excluding aspects normally associated with instruments.)
measurement for induction heating, 6: 1448(R)
Electrochemical analysis
(See also as subheading under materials analyzed; see also Polarographic analysis.)
efficiency of micro-Hg cathode in, 6: 1648
Electrochromatography
apparatus for separation of mixtures by, 6: 1135
Electrodes
(See also headings by names of materials, e.g., Graphite electrodes.)
particle exchange between metallic, in high vacuum, 6: 1393(R)
Electrodynamics
proceedings of the conference on dynamics of ionized media, University Coll., London, England, April 1951, 6: 1752
Electromagnetic fields
theory, generalized to include case of self-energy not equal to zero, 6: 1366(J)
Electromagnetic lenses
mathematical model of, 6: 454(J)
Electrometers
(See also Electron tubes; Radiation detection instruments — ion current type.)
design of, 6: 1(R)
for pocket chambers, 6: 1581(P)
for small currents, 6: 282(J)
Electron beams
energy in a linear accelerator, 6: 713
focusing of, 6: 476(P)
mathematical analysis of factors causing disturbances in, 6: 1770
molecular fission of hydrocarbons by, 6: 836(J)
scattering of, by foils, 6: 725(J)
Electron-diffraction analysis
(See also as subheading under specific materials.)
bibliographies, 6: 1273(J)
measurement of electron diffraction intensities, 6: 108(R)
Electron microscopes
revolving specimen stage for, 6: 1500
Electron microscopy
danger of exposure to x rays from, 6: 783(J)
ultra-thin tissue sections for, 6: 766(J)

Electron pairs
calibration of nuclear emulsions using, from Be^9 γ rays, 6: 1907(J)
detection and measurement of, 6: 655
from deuteron bombardment of B^{10}, 6: 1009(J)
formation of, 6: 1861
formation of, by γ absorption in Pb and U, 6: 1543
production of, by mesons, 6: 673(J)
production of, by x radiation, 6: 402(J)
Electron scattering cross sections
measurement of, by electron sensitive nuclear emulsions, 6: 1030
Electron tubes
cold-cathode thyratrons, design of, 6: 1779
frequency controller for, 6: 1785(J)
for microwave generation, design of, 6: 1782(R)
Electrons
(For electrons from nuclear sources see also Beta particles; see also Positrons.)
absorption of, by Pb, 6: 395(J)
anomalous magnetic moment of, theory, 6: 1054(J)
capture and loss of, by protons passing through air, 6: 1905(J)
collision probability of slow, in gases, 6: 1490
diamagnetism of free, 6: 1772(J)
effects of scattering on bremsstrahlung in thin anticathodes, 6: 1890(J)
effects of scattering on spatial distribution of x-ray bremsstrahlung, 6: 1889(J)
effects on semiconductors, 6: 557(J)
elastic scattering of, effect of finite size of nucleus, 6: 1904(J)
emission of, due to γ rays, 6: 404(J)
energy loss in a proportional counter, 6: 393(J)
energy loss in thin layers, theory, 6: 1891(J)
interactions (neutron), theory, 6: 1832(J)
interactions of, 6: 681(J)
interactions of, short-range, 6: 1861
interactions with own radiation field, 6: 1365(J)
ionization by, 6: 1263(J)
multiple coulomb scattering of, in nuclear emulsions, 6: 1550(J)
multiple scattering of, in nuclear emulsions, 6: 1293(J)
multiple scattering of, theory, 6: 1902(J)
path length of, in foils, 6: 725(J)
polarization by polarized γ rays, 6: 1014(J)
polymerization of organic compounds by, 6: 141(J)
radiation from, in a magnetic field, 6: 918
radiative correction to scattering of, by nuclei, 6: 1545
range-energy relation in nuclear emulsions, 6: 1295(J)
response of scintillation crystals to, 6: 966(J)
scattering of, 6: 1818, 1821(R)
scattering of, by A, 6: 401(J)
scattering of, by Au and Be, 6: 1036(J)
scattering of, by Ag, Al, Au, C, and Cu, 6: 1035(J)
scattering of, by electrons, 6: 917
scattering of, by electrons in nylon, 6: 1037(J)
scattering of, by electrons in photographic emulsions, 6: 390
scattering of, by hydrogen, theory, 6: 719(J)
scattering of, in nuclear emulsions, 6: 661(J)
scattering of radiation by, 6: 1034(J)
simplified classical, theory, 6: 621(J)
three-quantum annihilation of, 6: 1771
trajectories of, in transgaussian region of elliptical electrostatic fields, 6: 283(J)
Electroplating
(See also subheadings plating and electroplating under base materials; also headings by materials of coating, e.g., Nickel coatings; see also Electrochemical analysis.)
electronic control system for, 6: 1578(P)
voltage regulator for control of, 6: 1777
Electrostatic analyzers
focusing of, theory, 6: 280(J)
Electrostatic generators
design of, 6: 1586(P), 1884(J)
Electrostatic lenses
transgaussian region of elliptical, theory, 6: 283(J)
Electrostatic precipitators
evaluation of, on a radiochemical process off-gas system, 6: 1092
for monitoring fission gases, design of, 6: 482(P)
Electrostatic separation
bibliographies, 6: 1423
Elementary particles
classical model of, 6: 452(J)
quantization of theory of spinning, 6: 1933(J)
Elements
age estimations of, 6: 922(J)
cytochemical analysis of, in biological samples, 6: 1101(J)
Elements (cont'd.)
formation of, in universe, 6: 1754
spectrographic determination of isotopic composition of, 6: 1573(P)
Elephants
leukocyte count of, 6: 510(R)
Embryonic tissues
radiosensitivity effects of suspensions of, 6: 763
Enanthic acid, α-bromo-
polarographic behavior of, 6: 538
Engineering Research Inst., Univ. of Michigan
progress reports, 6: 916(R)
Enriched reactors
design of, 6: 1323
Enzymes
(See also specific enzymes.)
effects of radiation on, 6: 916(R)
inactivation by oxidized fatty acids, 6: 1590
inactivation by radiation, 6: 40(J)
protective action of, against radiation injuries, 6: 23
Equation of state
of gases at high temperatures, 6: 1773
Erbium
spectrum of, isotope shifts in, 6: 1930(J)
Erbium chlorides
activity coefficients in aqueous solutions, 6: 558
transference numbers of, 6: 563
Erbium isotopes Er^{168}
internal-conversion coefficients of, 6: 1555
Erythrocytes
effects of radiation on, direct and indirect, 6: 1598
effects of x radiation on, 6: 778(J)
potassium concentration in, effects of cholinesterase and choline acetylase inhibitors on, 6: 791
potassium exchange in, in sickle cell anemia, 6: 1388
potassium exchange in, rate of, 6: 793
Escherichia coli
preparation of cell-free formic hydrogenlyase from, 6: 546
Esters
ultraviolet spectra of, 6: 850
Estrogens
radiosensitivity effects of, 6: 520(R), 763
Ethane-d
preparation of, 6: 1628
Ethane, 1,2-dibromo-
molecular vibrations of, and of its deuterated forms, 6: 137(J)
Ethane, difluoro-
molecular dipole moments of, 6: 131(J)
Ethane, diphenyl-
scintillations in, 6: 961
Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)-
effects of x radiation on, in alcoholic solution, 6: 1169(J)
Ethanol
biosynthesis of, by Pseudomonas lindneri via a fermentative pathway, 6: 1619(J)
ionization potential of, by mass spectrography, 6: 291(J)
protective action of, against x radiation, 6: 1386(J)
proton resonances in, effects of temperature on, 6: 1671(J), 1672(J)
radiosensitivity effects of, 6: 46, 48
Ether fires
control of, tests on, 6: 1394
Ethers, chlorofluoralkyl
preparation of, 6: 485(P)
Ethyl acetates
dissociation of, in G-M counter, 6: 312(J)
Ethylene
hydrogenation of, catalytic, 6: 1637
molecular vibration of, and of its deuterated form, 6: 137(J)
Ethylene (polymers)
as coatings for concretes, 6: 1724
Ethylene, chloro-
quadrupole spectrum and crystal structure of solid, 6: 1673(J)
Ethylene, chlorotrifluoro-
thermodynamic properties of, 6: 1159(J)
Ethylene, chlorotrifluoro- (polymers)
melting points and polymer-solvent interaction of, 6: 1413(J)
solubilities of, 6: 1412(J)
thermal decomposition of, 6: 126
Ethylene, tetrafluoro- (polymers)
thermal decomposition of, 6: 126
Europium chlorides
activity coefficients of, in aqueous solutions, 6: 558
transference numbers of, 6: 563

Europium complexes
polarographic analysis of, 6: 1651
Europium isotopes
alpha emission from, 6: 410, 1556
decay schemes of, 6: 1907
electron spectra of, 6: 954(R)
Eutectics
(See also specific eutectics; e.g., Potassium–sodium eutectics.)
formation of, 6: 119
Extraction apparatus
continuous liquid-liquid extractor for solvents of various density, design of, 6: 1686
Eyes
effects of radiation on, 6: 505
effects of x radiation on, in newborn mice, 6: 763
radiosensitivity of, 6: 506(R)

Fast neutrons
detection of, by proton recoils, 6: 640(R)
detector for, in presence of radiation, 6: 641
dosage determinations of, in standard tissue, 6: 1508
effects in tissue, 6: 34
interactions of, with D and protons, 6: 716
measurement of flux of, methods for, 6: 1503
scattering of, 6: 296(R)
scattering of, by Al, Bi, Cr, Cu, Fe, Pb, Ni, and Ta, 6: 980
scattering of, by O^{16}, 6: 1895(J)
scattering of, by protons, 6: 729(J)
Fatty acid complexes
with calcium and Sr, 6: 77
Fatty acids
addition compounds of perfluoro, with ethers and tertiary amines, 6: 132(J)
carbon C^{14} distribution in, of liver, 6: 169(J)
determination of, by thiobarbituric acid, 6: 1590
effects of radiation on metabolism of, 6: 38
metabolism of, effect of heparin on, 6: 19(J), 497(R)
oxidation of, as affecting enzyme inactivation, 6: 1590
oxidation of, in rat tissues, 6: 792
Fatty acids (labeled)
biosynthesis of, by liver slices, 6: 174(J)
Ferriin
exchange reactions of, with ferroin, 6: 85, 572
Ferritin
as an agent in vasodepression of blood vessels following irradiation, 6: 1600
Ferroin
exchange reactions of, with ferriin, 6: 85, 572
Fibrin
separation and S^{35} assay of, 6: 565
Fibrinogen
effects of x-radiation on viscosity and ultracentrifugal behavior of, 6: 30
turnover rate of, in the dog, 6: 565
Fibrinolysis
effects of radiation on, and effects on hemorrhage, 6: 510(R)
physiological effects, 6: 510(R)
Field theory
(See also Quantum electrodynamics.), 6: 744(J)
bound interaction representation in, 6: 1362(J)
calculation of quantized boson fields, 6: 745(J)
covariant representation of the nuclear field, 6: 1306(J)
distinction between particles and antiparticles, 6: 1368(J)
equations of particles of arbitrary spin, 6: 1059(J)
impulse approximation in theory of scattering, 6: 1544
interactions of nucleons, mesons, and photons, 6: 1055(J)
interactions of spin-½ particles with a central pseudoscalar field, 6: 752(J)
interactions of spin-1 particles with meson fields, 6: 1061(J)
multipole solutions of meson fields, 6: 1369(J)
non-local quantization of, 6: 751(J)
particle scattering in meson fields, 6: 1042(J)
perturbation treatment of closed states in, 6: 456(J)
quantum theory of scattering, 6: 1039(J)
renormalizable, divergent integrals in, 6: 746(J)
scattering problems in, 6: 727(J)
space inversions for fields of spin ½, 6: 1931
threshold for particle creation in quantum, 6: 1042(J)
Filter materials
(See also specific filter materials, e.g., Asbestos; Filter papers, Glass wool; Sand; etc.)
effective fiber diameter of, 6: 517(J)
Filtration
(See also under materials and processes.)
of aerosols, inertial mechanisms in, 6: 517(J)
Fire extinguishing agents
testing of, for ether fires, 6: 1394
Fish
size of, in White Oak Lake, 6: 11
Fission
(See also subheadings fission and neutron fission cross sections under fissionable elements and isotopes; also subheading from fission under specific radiations; see also Chain reactions, Multiplication factor, Nuclear reactions.)
bibliographies, 6: 1529
distribution of nuclear charge in, 6: 1424(R)
new long period delayed neutrons from, 6: 1860
theory, 6: 1261
theory of activation energy of nuclear, 6: 1840
theory of number of fissions induced in fissile material by a uniform distribution of neutrons, 6: 1536
Fission products
(See also isotopes of the specific elements produced by fission.)
activity analysis of, 6: 732(R)
charge of, as function of pressure of stopping gas, 6: 394(J)
distribution of activity in, 6: 731
maximum permissible limits of, in air, 6: 1611
metabolism of, in domestic animals, 6: 504(R)
neutron emission from, probability of, 6: 1424(R)
radioactive, industrial uses of, 6: 1706
radioactivity of, nomograms for calculating, 6: 406
yield curves of, 6: 1327(J), 1793
Flotation
(See also as subheading under materials being separated.)
collector depressant equilibria in, 6: 890, 894
Flotation reagents
(See also specific compounds used for flotation.)
tannic acid and quebracho as, 6: 890
Flowmeters
(See also Air flow; Fluid flow; Liquid flow.)
for measurement of gas flow, design of, 6: 1185
Fluid flow
(See also Convection (forced).)
bibliographies, 6: 1719(J)
dimensional analysis of, 6: 874(J)
in ducts with a uniformly distributed leakage, 6: 875(J)
equations of boundary layer near stagnation point, 6: 1716(J)
supersonic conical, at obstacle, equations for, 6: 1718(J)
Fluid flow (laminar)
diffusion of gases in, 6: 1205
Fluid flow (turbulent)
dynamics of suspended particulate matter in, 6: 184
Fluid propellants
quantitative evaluation of, 6: 1438(J)
Fluids
(See also Gases.)
activation of, by circulating through a neutron flux, 6: 1908
critical state of normal, 6: 1646(J)
2-Fluorenecarboxylic acid
preparation of, 6: 92
Fluorescence
(See also Luminescence; Phosphorescence.)
chromatographic analysis for, in Drosophila, 6: 767(J)
exciton theory for, 6: 306(J)
in mutant of maize, 6: 774(J)
in phosphors exposed to α and γ rays, 6: 1392(R)
induced by α or γ rays, 6: 653(R)
Fluoride complexes
equilibrium constants of, 6: 535
Fluorides
(See also Fluorine compounds.)
exchange reactions with HF, 6: 125
Fluorine
determination of, by measurement of nuclear magnetic resonance, 6: 1142(J)
electron affinity to, 6: 124, 555(J)
production of, using fluorine generator, 6: 1663
proton reactions (p,γ), 6: 1859
reaction of, with $KClO_3$, 6: 829(J)
reactivity of, with fluorocarbons, 6: 1662
spectrochemical determination of organically bound, application of hollow cathode source to, 6: 849

Fluorine chlorates
preparation of, 6: 829(J)
Fluorine compounds
(See also Fluorides.)
infrared spectra of, 6: 1157(J)
Fluorine generators
design and performance of, 6: 1663
Fluorine isotopes
exchange of, between HF and interhalogen compounds, 6: 125
Fluorine isotopes F^{17}
properties of energy states of, 6: 1859
Fluorine isotopes F^{18}
formation of, by proton bombardment of Cu, 6: 700
Fluorine isotopes F^{19}
deuteron reactions (d,α) and (d,p), 6: 1329(J)
energy levels of, 6: 1011(J)
nuclear magnetic moments of, 6: 995(J), 1307(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
radiometric analysis of, in gaseous fluorides, 6: 125
Fluorine isotopes F^{20}
energy levels of, 6: 1329(J)
Fluorocarbons
(Compounds containing only C and F; see also specific compounds.)
preparation of, with BiF_5, 6: 1570(P)
production of, 6: 464(P)
stabilizing of, methods for, 6: 1662
thermodynamic properties of, 6: 127(J)
Fluorocarbons (polymers)
fabrication of, by powder molding, 6: 461(P)
Fluorohalocarbons
(Compounds containing only C, F, and other halogens; see also specific compounds.)
melting points and polymer-solvent interaction of, 6: 1413(J)
polymerization of, at high pressures, 6: 459(P)
solubilities of, 6: 1412(J)
Fluorohydrocarbons
(Compounds containing only C, F, H; see also specific compounds.)
preparation of, with SbF_3, 6: 1664(J)
Fluoroörganic compounds
spectrochemical analysis of, application of hollow cathode source to, 6: 849
synthesis of, review of recent advances in, 6: 1157(J)
Fluorophosphoric acid, diisopropyl ester
effects on concentration of K in erythrocytes, 6: 791
Folic acid (labeled)
synthesis of, 6: 853(J)
Food
preservation of, by irradiation, 6: 916(R)
Formaldehyde
reactions of, with aldehydes containing one α-hydrogen, 6: 179(J)
Formic acid
incorporation and retention of, in nucleic acids, 6: 566
isotopic effects in dehydration of, 6: 1122(J)
oxidation of, in irradiated solutions, 6: 556
Formic hydrogenlyase
properties and preparation of, from Escherichia coli, 6: 546
Fossils
comparison of, with similar Recent bones, 6: 764
Francium isotopes
separation of, from proton-bombarded Th target, 6: 818
Fructose
determination of, in fructose-6-phosphate and fructose-1-6-diphosphate, 6: 1399
Fructose (labeled)
biosynthesis of, 6: 1700
Fructose phosphates
analysis of, for fructose, 6: 1399
Fuels
(See also fuels by name; e.g., Oils; see also Fluid propellants.)
effects of radiation on, 6: 916(R)
Fungi
(See also Molds.)
effects of α-particles on mutations in, 6: 1085
effects of α-particles on spore germination and microthallus development of, 6: 1073
pathological effects on maize, 6: 499
synthesis of amino acids and carbohydrates by, 6: 759
Furnaces
(Including devices using conduction, induction, radiation, etc. See also pertinent metallurgical subheadings under the material, e.g., casting and metallurgy. See also Resistance furnaces.)
Furnaces (cont'd.)
high-temperature, for use in nuclear reactors, design of, 6: 1316
for melting steel in vacuum, design of, 6: 246(J)
for sintering studies, design of, 6: 1449(R)
Fused salts
electrolysis of, 6: 599(R)
phase studies of, methods used in, 6: 1398(J)

Gadolinium
preparation of, by calcium reduction of chlorides, 6: 1171
Gadolinium isotopes
alpha emission from, 6: 410, 1556
Gadolinium isotopes Gd^{155}
binding energy of, calculation, 6: 333(J)
Galena
flotation of, depressant action of tannic acid and quebracho in, 6: 890
flotation of, inorganic depressants for, 6: 894
Gallium
chemistry, metabolism and toxicity of, a review, 6: 1106(J)
distribution coefficient of, in β, β'-dichlorodiethyl ether-HCl system, 6: 1424(R)
distribution of, in bones and tissues, 6: 494
dosage determinations and toxicology of, 6: 527
neutron resonance cross sections of, 6: 1304(R)
sources of, and recovery from flue dusts and germanite, 6: 1692(J)
Gallium citrates
preparation of, 6: 494
Gallium isotopes Ga^{67}
half-lives of, measured by differential ionization method, 6: 1357(J)
Gallium isotopes Ga^{72}
diagnostic and therapeutic uses in bone malignancy, 6: 1106(J)
dosage determinations and physiological effects of, 6: 527
Gamma absorption cross sections
measurement of, by photonuclear detector method, 6: 334
Gamma cross sections
(See also subheading gamma reactions under specific elements and isotopes.)
measurement of, 6: 373(J)
methods of measurement of, 6: 963
theory of electrical dipole, 6: 1013(J)
Gamma radiation
(See also X radiation.)
absorption of, 6: 1533
absorption of, in Pb and U, 6: 680(R), 1543
absorption of, in moist sand, 6: 296(R)
absorption of, for thickness measurements, 6: 937
accompanying K capture of Fe^{55}, 6: 434(J)
from americium Am^{241}, 6: 413
angular correlations of, from Cd^{111}, 6: 347(J), 417(J)
angular correlations of, in a cascade, 6: 339
angular distribution of, from polarized nuclei, 6: 1842(J)
angular distribution of secondary, from (n,γ) in reactor shields, 6: 1342
anistropy of, from Co^{60}, 6: 997(J)
chemical effects on water, 6: 144(J), 1678
in cosmic radiation, 6: 612(J)
detection and measurement of, 6: 296(R), 313(J), 409, 650(R), 1802(R), 1907
detection of circularly polarized, 6: 1014(J)
detection of, with polyvinyl chloride films, 6: 660(J)
deuterons and protons produced by, on Cu, 6: 1532
diffusion of, through matter, 6: 382
dosage determinations of, in standard tissue, 6: 1506
drill-hole logging with, theory, 6: 1459
effects on biochemical oxidation of domestic sewage, 6: 1597
effects on enzymes, 6: 40(J)
effects on liquids, 6: 556
effects on organic liquids, measurement of, 6: 145(J)
from heavy nuclei, in relation to vibration-rotation spectra, theory, 6: 981(J)
histological effects of repeated low doses on mice, 6: 1606(J)
history of, 6: 712(J)
lethal dosage determinations for mice, 6: 506(R)
neutron and proton yields from, on Si and Mg, 6: 1874(J)
nuclear reactions and stars produced by, 6: 1861
pair production by, and detection of, 6: 655
pair production by, dependence on Z of, 6: 402(J)
polarization and angular correlation of, from Rh^{106}, Co^{60}, and Cs^{134}, 6: 430(J)
polarization of doubly scattered, 6: 1898(J)
from proton bombardment of Be^9, 6: 405
reflection of, from quartz, 6: 444(R)

Gamma radiation (cont'd.)
scattering of, mathematical analysis, 6: 1285
secondary electronic emission due to, 6: 404(J)
statistical analysis of (γ,n) and (γ,p) reactions, 6: 1858
theory of, 6: 983(J)
transmission of, mathematical analysis, 6: 1285
Gamma shielding
design of, 6: 1360, 1582(P)
Gamma sources
preparation and industrial uses of, 6: 1552(R)
uses of Rn, W^{187}, Th, and Ir^{192} as, 6: 446(R)
Gamma spectra
mathematical analysis, 6: 1285
measurement of, with scintillation detectors, 6: 307(J)
from proton bombardment of C, 6: 362
Gamma spectrometers
calibration of, 6: 444(R)
design and performance of, 6: 647, 1803(J), 1861
stability of, 6: 1802(R)
Gas analyzers
electronic, design of, 6: 576(J)
Gas flow
(See also Air flow.)
analytical control of, apparatus for, 6: 462(P)
kinetics of, 6: 624(J)
mass flowmeters for measurement of, 6: 1185
motion of solid particles in, 6: 188(J)
in a porous medium, 6: 190(J)
turbulence of, effect of dust concentration on, 6: 189(J)
Gas flow (turbulent)
density fluctuations and gravitational instability in, 6: 1276(J)
density fluctuations in, 6: 1277(J)
velocities in, frequency distributions of, 6: 331(J)
Gaseous ionization
(See also subheading ionization under gaseous materials.)
effects of radiation on, 6: 916(R)
proceedings of the conference on dynamics of ionized media, University Coll., London, England, April 1951, 6: 1752
self-magnetic field in, 6: 1274(J)
theory of, 6: 722(J)
Gases
(See also specific gaseous substances.)
analysis of, bibliography, 6: 110
analysis of, continuous, 6: 462(P)
analysis of, with a vacuum gage, 6: 587(J)
compressibility of, apparatus for measuring, 6: 187(J)
cooling by, of a porous heat source, 6: 1197
detection of impurities in, by mass spectrometer, 6: 1006
detonation and ignition of, 6: 916(R)
diffusion of, hydrodynamic equations for, 6: 622(J)
equations of motion in viscous, 6: 624(J)
ionization of, apparatus for measuring, 6: 650(R)
liberation by laminarly flowing fluids, 6: 1205(J)
performance of bare-wire thermocouples in air streams, 6: 1713
radiological monitoring of, equipment for, 6: 482(P)
thermal convection in, 6: 623(J)
thermo-osmosis of, through membranes, 6: 1775(J), 1776(J)
transport properties of, relationship between, 6: 1774
Gastro-intestinal tract
transit in, measurement of, 6: 13
Geiger-Mueller tubes
calibration of, with K^{40}, 6: 667(J)
design of, 6: 755(J)
discharge mechanism in A-filled, 6: 658(J)
dissociation of ethyl acetate in, 6: 312(J)
increasing counting efficiency of, by backscattering beta rays within the tube, 6: 1504
maze-type, with fillings possessing low temperature coefficients, plateau changes in, 6: 1296(J)
pulses from, under minimum load conditions using oscillographic techniques, 6: 1800
slow discharge in nonself-quenching, 6: 310(J)
xenon-ether-filled, properties of, 6: 1290(J)
General Electric Research Lab.
progress reports, 6: 1239(R), 1475(R)
Genetics
mutations and rate processes, theory, 6:
radiation factors affecting, 6: 769(J), 773(J)
Geological Survey
progress reports, 6: 1454(R), 1455(R)
Geology
gamma logging, theory, 6: 1459
George Peabody Claims
torbernite occurrence at, 6: 214
Germanium
deuteron range-energy relation in, 6: 1032(J)
effects of α bombardment of n-p-n junction in, 6: 1045(J)
electric conductivity of, during neutron bombardment, 6: 1349(J)
electron-hole production in, by α particles, 6: 1044(J)
localized electronic states in bombarded, 6: 557(J)
sources of, and recovery from flue dusts and germanite, 6: 1692(J)
thermodynamic properties of, 6: 1641
Germanium halides
thermodynamic properties of, 6: 1641
Germanium hydroxides
solubility of, 6: 1641
Germanium iodides
thermodynamic properties and spectra of, 6: 1641
Germanium oxides
thermodynamic properties of, 6: 1641
Glass
(See also Borosilicate glass.)
corrosion of, by H_2O_2, 6: 240(J)
surface tension of, methods of measuring, 6: 202
wetting of metals by, 6: 201(R)
Globulin
electrophoretic determination of, in blood and urine, 6: 1074
Glucose
determination of poly-, in blood and urine, 6: 1652
fermentation of, by Leuconostoc mesenteroides, 6: 165
fluorimetric analysis of, 6: 1134
metabolism of, by rat liver, 6: 758
metabolism of, in x-irradiated yeast, 6: 510(R)
uptake of C^{14} from, by amino acids in mouse brain, 6: 72(J)
Glucose (labeled)
synthesis of, 6: 1430
Glucose phosphates
exchange of P of, with inorganic phosphate, 6: 802
Glutamic acid
determination of, by N^{15} isotope dilution, 6: 819(J)
Glutaric acid, α-oxo-
conversion of, to malic acid in pigeon breast muscle, 6: 1620(J)
Glyceric acid
exchange of P of, with inorganic phosphate, 6: 802
production of, in photosynthesis, 6: 167
Glycerides
synthesis of, 6: 1120
Glycerophosphates
effect on calcification of bone, 6: 21(J)
Glycine, phthalyl-, ethyl ester (labeled)
infrared spectra of, 6: 1696(J)
Glycogen
biosynthesis of, hormonal effect on, 6: 758
storage in liver, effects of radiation on, 6: 56(J)
Glycolic acid
production of, in photosynthesis, 6: 167
Glycolysis
in mammary carcinomas, 6: 1091(J)
Gold
deuteron range-energy relation in, 6: 1032(J)
electric conductivity of, effects of plastic deformation on, 6: 241(J)
electron scattering by, 6: 1035(J), 1036(J)
tissue distribution of, as effected by sub-total hepatectomy, 6: 1379(R)
wettability of, by glasses, 6: 201(R)
Gold-cadmium alloys
phase studies of, 6: 1238(R)
phase transformations and thermal expansion of, 6: 600(R)
Gold-copper alloys
ordering kinetics in, 6: 115
Gold-iron alloys
phase studies of, 6: 1467(R)
Gold isotopes
alpha emission from, 6: 410, 1556
separation of, from deuteron-bombarded Pt and identification of, 6: 151
Gold isotopes Au^{196}
decay scheme of, 6: 1925(J)
Gold isotopes Au^{197}
decay schemes of, 6: 1925(J)
gamma reactions (γ,γ) and (γ,n), 6: 365(J)
nuclear electric moments of, 6: 996(J)
Gold isotopes Au^{198}
decay schemes of, 6: 435(J)
Gold isotopes Au^{199}
decay scheme of, 6: 1925(J)

Gold–nickel alloys
phase studies of, 6: 1467(R)
Gold–silver alloys
diffusion in, 6: 603(R)
Gold–silver couples
porosity of, metallographic studies, 6: 1474
Gold single crystals
sintering of, 6: 603(R)
Gonadotropic hormones
effects on biosynthesis of testosterone, 6: 173(J)
Gonadotropins
effects of radiation and ultraviolet light on, 6: 772(J)
Graphite
(See also Carbon.)
activation energy for flow of electric current in, 6: 1239(R)
adsorption of O on, as factor in combustion, 6: 1669(J)
analysis of, by pile oscillation method, 6: 697(J)
compression properties of, 6: 1721
corrosion of, by H_2O_2, 6: 240(J)
crystal structure of, 6: 1161(J), 1162(J)
electric conductivity of, 6: 1260
electron distribution in, 6: 493(J)
lattice vibrations and specific heat of, 6: 1414
as reactor moderator, 6: 1315
self-diffusion in, theory, 6: 1152
Graphite moderated reactors
design of, 6: 1323
Grignard reagents
preparation of, 6: 92, 93
Guanine (labeled)
synthesis of, 6: 569(J)

Hafnium
chemical properties of, review, 6: 99(J)
determination of, by selenite method, 6: 1636
ion exchange properties of, 6: 1636
separation of, from Zr by ion exchange, 6: 844(J)
Hafnium borohydrides
preparation of, 6: 467(P)
Hafnium(IV) chloride complexes
thermal decomposition of, 6: 1636
Hafnium chlorides
compounds with alkyl benzoates, heats of formation of, 6: 1396(J)
reactions of, with phosphorus oxyhalogens, 6: 1636
Hafnium compounds
organic, preparation and properties of, 6: 1636
Hafnium isotopes Hf^{175}
decay schemes of, 6: 1046
Hafnium isotopes Hf^{179}
isomeric transition of, 6: 409
Hafnium isotopes Hf^{181}
decay schemes of, 6: 650(R)
Halohydrocarbons
(Compounds containing only C, H, and halogens; see also specific compounds.)
effects of x radiation on, in alcoholic solution, 6: 1169(J)
Halogens
thermodynamic functions of, 6: 274
Hanford Works
waste disposal at, 6: 1211
Health physics
(Covering very general papers; specific aspects of Health Physics are indexed separately, e.g., Radiation protection; Radiation detection instruments; subheading biological effects under various radiations; subheadings metabolism and toxicology under various materials.)
lecture series on, 6: 781
standards of radiological protection and control, lecture on, 6: 1095
Heat exchangers
(See also as subheading under processes using heat exchangers.)
design of, 6: 1202(J)
design, selection, and installation of, for aircraft, 6: 865
materials for, testing of, 6: 1723
Heat-resisting alloys
(See also specific alloys concerned.)
creep properties of, effects of cold-work on, 6: 1207
fatigue of, at high temperatures, 6: 876
metallurgical and mechanical properties of, 6: 596
Heat transfer
(See also under units and shapes; also the subheading thermal conductivity under materials; see also Boiling, Heat exchangers, and Thermal conductivity.)
Heat transfer (cont'd.)
by air flow in an inconel tube, theory, 6: 866
bibliographies on, 6: 1720(J)
effects of an electric field on, 6: 1203(J)
effects of surface boiling on, 6: 1443
equipment for testing, of liquid metals, 6: 186(R), 579
to and from flowing Hg, 6: 1199
by forced convection in Pt tubes, 6: 867
in infinitely long concentric cylinders, theory, 6: 869
by liquid metals in annuli and circular tubes, 6: 1198
from a porous heat source to a gas, theory, 6: 1197
reactor tube size for specified, 6: 1709
in reactors, lecture on, 6: 1201
Heavy water
(See Water-d_2.)
Heavy water reactors
(See also NRX reactor, and Zoe reactor.)
design of, lecture on, 6: 1323
design of low power, at Chalk River, 6: 1854
multiplication factor and neutron flux distribution of, 6: 1854
Helium
(See also Alpha particles.)
absorption and scattering of π mesons in, 6: 1817
alpha scattering cross sections of, 6: 1033(J)
collision probability for low electrons in, 6: 1490
diffusion of, through Al, 6: 1745
disintegration of, by neutrons, 6: 1004
π meson scattering by, 6: 315
π mesons from, by photon reactions, 6: 324
permeation of, through stainless steel and inconel tubing, 6: 272
polarization and scattering of protons by, 6: 1887
proton scattering cross section of, 6: 1040(J)
Helium ion beams (He^3)
acceleration of, by Cockcroft-Walton accelerator, 6: 1886(J)
reaction with He^3 nucleus, 6: 1535
Helium isotopes
spectra of, isotope shifts in, 6: 743(J)
Helium isotopes He^3
abundance of, in nature, 6: 1793
deuteron cross sections of, 6: 1859
photodisintegration cross sections of, calculations, 6: 1868(J)
reaction of, with He^3, 6: 1535
Helium isotopes He^4
deuteron cross sections of, 6: 1859
deuteron reactions (d,p), 6: 1869(J)
photodisintegration cross sections of, calculations, 6: 1868(J)
polarization of protons by scattering from, 6: 1900(J)
proton reactions (p,d), 6: 1021(R)
Helium isotopes He^6
production of, in the Brookhaven reactor and Columbia cyclotron, 6: 1304(R)
Hematite
absorption of dodecylamine acetate on, 6: 251(R)
Hematopoietic system
effects of radiation from Ga^{72} on, 6: 527
effects of radiation on, 6: 33
Hemolysis
caused by irradiation of erythrocytes, 6: 778(J)
Hemorrhage
enzymatic factors in, 6: 510(R)
Heparin
(See also the subheading antiheparin activity under specific materials.)
influence of, on lipoprotein metabolism, 6: 19(J), 497(R)
Heptane
exchange of D for H in, 6: 122(J)
Heptane, hexadecafluoro-
thermodynamic and optical properties, infrared and Raman spectra of, 6: 1158(J)
Heptane–sulfur dioxide systems
diffusion in, 6: 537
Heterocyclic compounds
molecular electric moments of, calculation, 6: 1695
Hexane
chemical effects of α particles on, 6: 1421(J)
1-Hexanol
solubility of metallic nitrate hydrates in, 6: 83
1-Hexanol systems
phase studies of nickel(II) nitrate-, 6: 81
Hexatriene, diphenyl-
fluorescence of, α- or γ-induced, 6: 653(R)

Hexoses
(See also Sugars.)
ion exchange separation of, 6: 148
High-temperature alloys
(See Heat resisting alloys.)
Histamine
effects on distribution of Ca and I, 6: 529
Holmium isotopes Ho^{166}
internal conversion coefficients of, 6: 1555
isomers of, upper limit to half life of, 6: 1555
Horizons Inc.
progress reports, 6: 236(R), 1737(R)
Hormones
(See also hormonal factors as subheading under organs, glands, and biological processes.)
deficiency of, carcinogenetic effects, 6: 1080
physiological effects of, 6: 1080
secreted by I^{131} induced pituitary tumors, physiological effects of, 6: 1076
Hyalite (uraniferous)
occurrence of, in Argentina, 6: 215(J)
Hydrazyl, α,α-diphenyl-β-picryl-
paramagnetic resonance absorption of, 6: 1166
Hydrocarbons
(See also specific compounds; see also Fluorohydrocarbons.)
chemical effects of α particles on, 6: 1421(J)
fluorination of, with BiF_5, 6: 1570(P)
molecular fission of, by electron impact, 6: 836(J)
molecular structure of, relation to nuclear relaxation time, 6: 1418(J)
reflection of slow neutrons from liquid, 6: 1903(J)
Hydrochloric acid
ionization of, in dioxane-water solutions, 6: 1631
Hydrofluoric acid
exchange reactions of, with interhalogen compounds, 6: 125
Hydrofluoric acid systems
redox reactions in, polarographic study of, 6: 552(R)
Hydrogen
absorption of cosmic particles in, 6: 260(J)
collision probability for slow electrons in, 6: 1490
coherent neutron scattering amplitude of, 6: 1903(J)
compressibility isotherms and thermodynamic functions of mixtures of, with N_2 and NH_3, 6: 1275(J)
determination of, bibliography on, 6: 110
deuteron cross sections of, 6: 1859
deuteron scattering by, 6: 1330(J)
deuteron scattering cross sections of, 6: 717
effects on stability of fluorocarbons, 6: 1662
energy spectra of protons scattered from, 6: 388, 1753
infrared spectra of, calculations, 6: 161(J)
isotopic exchange reaction of, with Li and Na borohydrides, 6: 1176
mass defect of, theory, 6: 1060(J)
mass of, 6: 349(J), 991(J)
mass of, by mass spectrography, 6: 1793
mass of, from nuclear reaction energies, 6: 992(J)
π meson scattering by, 6: 315
π meson scattering cross sections of, 6: 1818
π^- meson scattering cross sections of, 6: 316
π mesons from, by photon reactions, 6: 324
π^0 mesons from, by photon reactions, 6: 317, 671
π^+ mesons from, by proton reactions, 6: 669, 670
molecular vibration of, and of its deuterated forms, 6: 137(J)
multiple meson production in, by cosmic particles, 6: 267(J)
neutron coherent scattering amplitude of, 6: 1860
neutron and proton scattering cross sections of, 6: 1887
neutron reactions (n,p), 6: 716
neutron scattering cross sections of, 6: 729(J), 1340
neutron total cross sections of, 6: 1525
nuclear momentum distribution in, inferred from proton scattering, 6: 1841
proton range-energy relation in, effect of H_2 pressure on, 6: 1339
proton reactions of, in nuclear emulsions, 6: 611(J)
reaction kinetics of, with U metal, 6: 573
scattering of neutrons by, 6: 381, 715
theory of molecular, in magnetic fields, 6: 1828(J)
thermo-osmosis of, through rubber, 6: 1776(J)
ydrogen-deuterium systems
mass spectrographic analysis of, 6: 547
ydrogen halides
(See also specific compounds; e.g., Hydriodic acid.)
hermodynamic functions of, 6: 274
Hydrogen ions
(See also Protons.)
response of scintillation crystals to, 6: 966(J)
Hydrogen isotopes
effects on bonds in crystals, 6: 550(J)
mass spectrographic determination of, using U reduction, 6: 1792
Hydrogen isotopes H^1
(See Hydrogen.)
Hydrogen isotopes H^2
(See Deuterium.)
Hydrogen isotopes H^3
(See Tritium.)
Hydrogen-oxygen-steam systems
explosive limits of, 6: 273
Hydrogen peroxides
corrosive effects and chemical stability of, 6: 240(J)
decomposition of by γ radiation, mechanism and rate constants of, 6: 1677
Hydrogen sulfides-d
microwave spectrum and molecular properties of, 6: 1521
Hydrogenation
(See also as subheading under specific materials.)
rate equations for catalytic, 6: 1637
Hydrolysis
(See also as subheading under specific materials.)
heat of reaction and crystal energy in high-temperature, of solid trichlorides, 6: 1753
Hydroxylamines, alkyl-
reaction with nitrous acid, 6: 1628
Hyperfine structure
(See also subheading spectra under specific materials.)
modifications in, produced by electrodynamic effects, 6: 690(J)
nuclear magnetic moment measured by, anomaly in, 6: 1839
radiative corrections to, theory, 6: 451(J)
of solutions containing Mn^{++} ions, 6: 1312(J)

Illinois Inst. of Tech.
progress reports, 6: 552(R)
Illite
analysis of, 6: 1458
Inconel
(See Nickel alloys.)
Indium
diffusion of In and Tl in, near the melting point, 6: 895
x-ray spectra of, 6: 97(J)
Indium complexes
equilibrium constants of, 6: 535
Indium isotopes
isomeric transition of, 6: 409
Indium isotopes In^{111}
decay schemes of, 6: 1352(J)
Indium isotopes In^{114}
decay schemes of, 6: 650(R)
internal conversion in, 6: 1919(J)
Indium isotopes In^{115}
chemical separation of isomeric, 6: 845(J)
Indium-thallium alloys
phase studies of, 6: 1238(R)
3-Indoleacetic acid (labeled)
synthesis of, 6: 164, 568
Infrared radiation
detection and measurement of, using temperature sensitive phosphors, 6: 1510
effects on x- and γ-ray induced chromosomal aberrations, 6: 27
Institute of Engineering Research, Univ. of California, Berkeley
progress reports, 6: 201(R), 231(R)
Instruments
(Common instruments are entered directly, e.g., Pressure gages and Voltmeters. See also various processes for pertinent instrumentation; see also Radiation detection instruments.)
development of, at the National Bureau of Standards, 6: 1497(R)
Insulin
effects on P^{32} uptake by erythrocytes, 6: 790
Intercoolers
for high-altitude cooling, 6: 1711
Internal conversion
(See also Conversion electrons and Electrons—emission.)
in Ba^{137}, Cd^{113}, In^{114}, and Pr^{144}, 6: 1919(J)
calculation of final state of nuclei from coefficient of, 6: 1064(J)
measurement of, by scintillation pulse analysis, 6: 1499

Internal conversion (cont'd.)
in Tc^{99}, effect of chemical combination on, 6: 733, 734
theory of, 6: 409
Intestine
effects of radiation on, 6: 37
effects of shielding of, on lethal effects of x-rays, 6: 1083
systemic effects of irradiation of, 6: 35
Invar
(See Iron–nickel alloys.)
Invertase
action of, on sucrose, 6: 1704(J)
Invertebrates
effects of radiation on, 6: 1381(J)
Iodates
solubility of, influence of mixed solvents on, 6: 100(J)
Iodine
diagnostic and therapeutic uses of, 6: 523(J)
effects of, in radiolysis of hydrocarbons, 6: 1674
spectra of, effects of oxygenated solvents on, 6: 1694
tissue distribution of, during histamine shock, 6: 529
tissue distribution of, in larvae, 6: 111
uptake of, by thyroid gland, 6: 496(R)
Iodine isotopes I^{124}
forbidden β^+ spectra of, 6: 1914(J)
Iodine isotopes I^{128}
decay of, β-γ angular correlations in, 6: 1843(J)
Iodine isotopes I^{127}
quadrupole resonance frequency of, in crystalline covalent compounds, 6: 343(J)
Iodine isotopes I^{129}
nuclear properties of, 6: 1928
Iodine isotopes I^{131}
beta and γ spectra of, 6: 422(J)
concentration of, in hospital wastes, 6: 519(J)
contamination of metal surfaces by, in solution, 6: 883
decay schemes of, 6: 436(J), 1371, 1922(J)
disintegration of, 6: 420(J)
dosage determinations of, in thyroid glands, 6: 67(J)
gamma emission of, 6: 1511
histological and pathological effects on thyroid gland, 6: 1604(J)
neoplasms of the pituitary induced by, 6: 776(J)
occurrence of acne and gynecomastia after administration of, in hyperthyroid therapy, 6: 1087(J)
physiological effects and tissue distribution of therapeutic doses, 6: 1104(J)
pituitary tumors produced by, 6: 1080
production of, from pile-irradiated Te, 6: 151
removal of, from water supplies, 6: 515
in treatment of thyroid carcinoma, 6: 68(J)
Ion beams
(See also headings for beams identified by particles, e.g., Neutron beams; Molecular beams; etc.; see also Accelerators; Ion sources.)
double focusing of, with small magnetic lenses, 6: 1794
focusing of, 6: 296(R), 476(P)
neutralization of space charge in positive, 6: 636(J)
Ion exchange
(Theoretical reports on equilibria, etc.; see also as subheading under specific materials; see also Adsorption.)
rare-earth separation by, theory, 6: 1690(J)
Ion exchange materials
(See also specific materials, e.g., Resins; Zeolites, etc.; see also Anion exchanging compounds.)
suitability of, for electrophoretic separations, 6: 1424(R)
Ion sources
(Covering ions from nonradioactive sources; for radioactive sources see headings identified by emitted radiation, e.g., Alpha sources; see also instruments having an ion source component, e.g., Accelerators; Mass spectrometers, etc.)
design of, 6: 1549
for H^3 and He^3 ions, 6: 1886(J)
for mass spectrometers, 6: 972(J), 1574(P), 1580(P)
for negative ions, 6: 290(J)
operation of, 6: 481(P)
Ionization chambers
boron trifluoride for, 6: 639
calibration of, 6: 662(J)
calibration of 4 π high pressure, 6: 643
for C^{14} measurement, 6: 654
for comparing nuclear reactions, 6: 1576(P)
for continuous x-ray monitoring, 6: 958
cosmic-ray intensity measurement with, 6: 928(J)
Ionization chambers (cont'd.)
design of, 6: 296(R), 640(R), 956
design, calibration, and performance of, at RCA, 6: 636(R), 650(R), 651(R), 652(R)
determination of electrical depth of, 6: 300(J)
for radiotherapy, 6: 668(J)
for thermal neutron flux measurement, 6: 666(J)
Ionization potentials
determination of, by mass spectrography, 6: 291(J)
determination of, monoenergetic electron source for, 6: 1263(J)
Ions
(See also heading for ions by name, e.g., Uranium(IV) ions; see also Anions; Recoil ions.)
acceleration of, 6: 481(P)
polarizability of, in eutectic mixtures, 6: 119
Iridium
tissue distribution of, in rats, 6: 496(R)
Iridium isotopes Ir^{192}
decay schemes of, 6: 444(R)
gamma radiation following decay of, 6: 1861
gamma spectra of, 6: 446(R)
half lives of, 6: 1912(J)
internal conversion and isomeric transition of, 6: 409
Iron
(See also Steel.)
absorption of cosmic photons in, 6: 258(J)
analysis of, for S and O by H reduction, 6: 1658(R)
corrosion of, by Bi–Pb eutectic, 6: 901
corrosion of, by H_2O_2, 6: 240(J)
corrosion of, by liquid Bi, 6: 900
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
infrared spectra of, calculations, 6: 161(J)
ion exchange studies of, 6: 1628
neutron cross sections of, 6: 1526
neutron diffraction pattern for, 6: 1038(J)
neutron scattering cross sections, 6: 493(J)
permeability of, by gas, 6: 1232(R)
physical properties of porous, 6: 1231(R)
preparation of porous, 6: 1231(R)
scattering of neutrons by, 6: 980
spallation products of proton-bombarded, 6: 1862
spectrographic determination of, in organic solids, 6: 158
spectrophotometric determination of traces, in Zr using tiron, 6: 1656
Iron alloys
corrosion of, by H_2O_2, 6: 240(J)
Iron–cerium alloys
constitution diagrams of, 6: 912(J)
Iron–chromium alloys
corrosion of, by liquid Bi, 6: 900
Iron–chromium–cobalt–nickel alloys
creep properties of, effects of coldwork on, 6: 1207
Iron–cobalt alloys
recrystallization of, effects of magnetic field on, 6: 601(R)
Iron complexes
equilibrium constants of, 6: 535
Iron(II) fluorides
neutron diffraction analysis of, 6: 1548
Iron–gold alloys
phase studies of, 6: 1467(R)
Iron ions
exchange reactions between, in aqueous solution, 6: 1182
inhibition of Ti corrosion by, 6: 588
Iron(II) ions
electron transfer exchange reactions of, with Fe(III) ions, 6: 85, 572
Iron(III) ions
electron transfer exchange reactions of, with Fe(II) ions, 6: 85, 572
spectrophotometric determination of, in HCl, 6: 1393(R)
Iron isotopes
yield of, in high energy nuclear reactions, 6: 1628
Iron isotopes Fe^{52}
decay schemes of, 6: 1628
Iron isotopes Fe^{53}
beta spectra and half lives of, 6: 735
Iron isotopes Fe^{54}
binding energy of, 6: 989(J)
gamma reactions (γ,n), 6: 1871(J)
Iron isotopes Fe^{55}
formation of, by neutron or deuteron reactions, 6: 1790
gamma emission from, accompanying K capture, 6: 434(J)
gamma spectra, 6: 1923(J)
mass of, compared to Mn^{55}, 6: 434(J)

Iron isotopes Fe^{54}
binding energy of, 6: 333(J), 989(J)
excited states of, from the Mn^{55} (p,n) reaction, 6: 1877(J)
Iron isotopes Fe^{59}
formation of, 6: 496(R)
half lives of, measured by differential ionization method, 6: 1357(J)
production and purification of, from Co^{59}(d,2p), 6: 1790
Iron–magnesium alloys
corrosion of, effect of composition and heat treatment on, 6: 228(R)
Iron–magnesium phosphorus alloys
corrosion of, effect of composition and heat treatment on, 6: 228(R)
Iron–nickel alloys
phase transformations in, 6: 600(R)
powder metallurgy and physical properties of porous, 6: 1233(R)
strains in, caused by martensitic transformation, 6: 594
surface tension of, effect of composition on, 6: 205
Iron–nickel–tantalum alloys
composition and physical properties of, 6: 909(J)
Iron perchlorates
corrosive effects on Ag, 6: 889, 1468
Iron–silicon alloys
crystal structure of, 6: 1155
Iron sulfates
corrosive effects on Ag, 6: 1468
oxidation of, in irradiated solutions, 6: 556
oxidation of, by x radiation, 6: 146(J)
Iron–titanium alloys
surface tension of, 6: 1449(R)
Iron–uranium alloys
magnetic susceptibility of, 6: 1433
Irradiation techniques
(See also subheading biological effects etc., under specific radiations; also subheading effects of radiation under specific materials, various animals, etc.; see also Radiation target cans; Radiotherapy.)
for producing γ-n and γ-p activities in betatrons, 6: 279(J)
Isotope separation methods
(See also subheading preparation, etc., under the isotopes of the elements.)
lecture on, 6: 1282
ultrasonic radiation, 6: 286
Isotopes
(See also specific isotopes; see also Radioisotopes; Stable isotopes; Tracer techniques.)
abundance of, in universe, 6: 1754
electromagnetically enriched, inventory of, 6: 285
isomeric transitions of, 6: 335
relative abundance of, spectrographic determination, 6: 1573(P)

Jeep reactor
(Norwegian)
design of, 6: 1855
pictures of, 6: 1002(J)
Jet Propulsion Lab., Calif. Inst. of Tech.
progress reports, 6: 1164(R), 1230(R), 1231(R), 1232(R), 1233(R)
Jets
drop formation, 6: 183
Johns Hopkins Univ.
progress reports, 6: 789(R)

K-capture
(See the subheading electron capture under specific materials.)
KAPL intermediate power breeder
gas seals for control rods of, design and testing, 6: 1707
Keratins
effects of radiation on, 6: 493(J)
Ketene
microwave spectra of, 6: 548
Ketones
(See also Diketones.)
fluorination of, 6: 91(R)
Klystrons
(See Electron tubes.)
Knolls Atomic Power Lab.
(See also KAPL)
progress reports on waste disposal, 6: 882(R)
Krypton
collision probability for slow electrons in, 6: 1490
fluorescence of, 6: 409
neutron scattering cross sections of, 6: 679
Krypton isotopes
radioactivity of, from fission, 6: 1839
Krypton isotopes Kr^{89}
angular correlation between electron and neutrino in decay of, 6: 1909

L-capture
(See the subheading electron capture under specific materials.)
Laboratories
(Design and construction; e.g., ventilation (including hood exhausts), heating, lighting, waste disposal, construction materials and services, etc.)
animal, design and air conditioning for, 6: 1373
research, space requirements for, 6: 1416
Laboratory for Nuclear Science and Engineering, Mass. Inst. of Tech.
progress reports, 6: 296(R), 407(R), 1483(R)
Lactates
metabolism of, in tumor and spleen cells, 6: 171(J)
Lactic acid
biosynthesis of, by fungus, 6: 532(J)
Lanthanum
fractional-precipitation separation of, from Ce and Pr, 6: 1174(J)
ion exchange with U in uranyl nitrate, 6: 76
tissue distribution of, in Drosophila larvae, 6: 1595
uptake and distribution of, in Drosophila, 6: 503
Lanthanum chlorides
activity coefficients, conductances, and transference numbers of, 6: 561, 562, 563
high-temperature hydrolysis and crystal energy of, 6: 1753
Lanthanum complexes
dissociation of, in aqueous solutions, 6: 564(J)
Lanthanum ferricyanides
electrolytic dissociation of, 6: 841(J)
Lanthanum isotopes La^{139}
decay schemes of, 6: 1916(J)
Lanthanum isotopes La^{140}
decay schemes, coincidence studies of, 6: 1917(J)
gamma spectra and decay scheme of, 6: 307(J)
preparation of carrier-free, 6: 1422
Lanthanum nitrates
distribution of, between water and 1-hexanol, 6: 102
Lanthanum oxides
heat content, specific heat, and entropy of, 6: 147(J)
Larvae
iodine distribution in tissues of, 6: 111
Lauric acid
incorporation of, into phospholipides by rats, 6: 798(J)
Lauric acid, cholesteryl ester
synthesis of, 6: 852
Lead
absorption of β particles by, 6: 395(J)
absorption of cosmic electrons by, 6: 262(J)
absorption of cosmic photons by, 6: 258(J)
absorption of γ radiation by, 6: 680(R), 1533, 1543
abundance of, in meteorites, 6: 1754
alpha reactions of, 6: 412
corrosion of, by H_2O_2, 6: 240(J)
dynamic coefficients of, 6: 245(J)
electrolytic separation and determination of, 6: 1138(J)
electrolytic separation from V, 6: 90(R)
formation of V^9 particles by bremsstrahlung on, 6: 1872(J)
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
isomeric activity produced in, by neutrons, 6: 432(J)
meson scattering cross sections, 6: 319, 978(J)
π^- meson scattering cross sections, 6: 319
π^0 mesons from, by photon reactions, 6: 317
neutrons produced by μ mesons in, 6: 1759(J)
penetrating showers produced in, by cosmic radiation, 6: 266(J
polarographic determination of, 6: 1163
scattering of neutrons by, 6: 980
Lead acetates
isotopic exchange reactions of, 6: 1626
Lead–bismuth eutectic
corrosive effects on metals and alloys, 6: 901
heat-transfer characteristics of, under forced convection, 6: 1712
Lead isotopes
primeval abundances of, and age of earth's crust, 6: 1755(J)
Lead isotopes Pb^{206}
half life of isomeric state of, 6: 1839
Lead isotopes Pb^{207}
gamma emission of, accompanying Bi^{207} decay, 6: 1915(J)

Lead isotopes Pb^{209}
mass, determination of, 6: 1283
Lead isotopes Pb^{210}
beta spectra of, 6: 418(J)
electron spectra of, 6: 954(R)
spectra of, 6: 1304(R)
Lead isotopes Pb^{211}
internal conversion lines of, 6: 995(J)
Lead nitrates
fluorescent screen of CdI_2 mixed with, 6: 301(J)
self-absorption and self-scattering of β particles by, 6: 1344
Lead–tin alloys
dynamic coefficients of, 6: 245(J)
Lead–titanium couples
corrosion of, by synthetic ocean water, 6: 1236
Leak detectors
(See also the subheadings instrumentation and monitoring under reactors and specific processes.)
cold cathode mass spectrometer, 6: 584(J)
design of, based on optical absorption in Schumann region, 6: 879(J)
review of, 6: 583(J)
Leaves
chlorophyll in, 6: 159
Leukemia
induction and prevention of, review, 6: 20(J)
Light
(Covering material in which the wavelength is not specified. See also headings prefixed by Photo-. See also Infrared radiation; Quantum mechanics; Scintillation detectors; Ultraviolet radiation.)
effects on photographic film, 6: 1681(J)
Lignites
fluorimetric analysis of, for U, 6: 1136
Linear accelerators
(For belt-type electrostatic generators see also Van de Graaff accelerators.)
design and operation of, at MIT, 6: 1541
electron production in, 6: 1338(J)
field strength in, determination of, 6: 377
heavy beam loading effects in, 6: 1337(J)
operation of, 6: 1821(R)
particle dynamics in, 6: 713
for protons, design, 6: 1026(J)
Linoleic acid
decarboxylation and reconstitution of, 6: 1702
oxidation of, as affecting enzyme inactivation, 6: 1590
Linoleic acid (labeled)
synthesis of, 6: 1702
Liquid flow
(See also Fluid flow.)
measurement of, in spherical containers, 6: 1440, 1441(R)
Liquids
coherent scattering processes in, theory of, 6: 726(J)
energy absorption by externally irradiated, 6: 1343
heat transfer in, 6: 1203(J)
Lithium
chromatographic separation of, from Na, 6: 848(J)
distribution between plasma and corpuscles in blood, 6: 16(J)
electronic energy levels of, in lithium hydride, 6: 1303(J)
gravimetric determination of small quantities of, 6: 821(J)
heat of solution of, in liquid NH_3, 6: 1121(J)
in human blood, quantity of, 6: 17(J)
π^0 mesons from, by photon reactions, 6: 317
origin of, in cosmic radiation, 6: 1754
polarographic determination of, in silicates, 6: 820(J)
proton reactions (p,n), 6: 1859
refining by distillation, effect of pressure on, 6: 1251(J)
review of production, properties, and uses of, 6: 914(J)
spectrographic analysis of, 6: 1145(J)
Lithium amide
crystal structure of, 6: 1661(J)
Lithium borates
coloration of, 6: 142(J)
cryoscopy in molten, 6: 541(J)
Lithium borohydrides
exchange reactions of, with H gas, 6: 1176
Lithium chlorides
ionization of, 6: 541(J)
Lithium compounds
bibliographies on use of organic, in organic synthesis, 6: 166
Lithium hydrides
electronic energy of, quantum mechanical study, 6: 1303(J)
Lithium imide
preparation and crystal structure of, 6: 1643(J)
Lithium iodide crystals
activation of, by Tl, In, Sn, and Ag, 6: 1507
Lithium iodides
scintillation and luminescence of, effect of temperature on, 6: 302(J)
Lithium isotopes Li^5
inversion of doublet in compound nucleus of, from p-He^4 scattering, 6: 1900(J)
Lithium isotopes Li^6
from Be^9 (p,α), 6: 1016(J)
deuteron reactions (d,α) and (d,p), 6: 710(J)
deuteron reactions (d,p)Li^{7*} (γ), angular correlations in, 6: 352(J)
disintegration of, in nuclear emulsions, 6: 644
electrolytic separation of, from molten $LiNO_3$, 6: 946
energy levels of, 6: 338, 405, 1859
preparation of targets of, 6: 536
range-energy curves for, in nuclear emulsions, 6: 397(J)
Lithium isotopes Li^7
neutron capture cross section of, extra-nuclear contribution to, 6: 1873(J)
nuclear energy levels of, 6: 1880(J)
nuclear magnetic moments of, 6: 995(J)
nuclear spin of excited state and isomeric transition of, 6: 352(J)
proton reactions of, 6: 985
proton reactions (p,α), 6: 711(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
proton reactions (p,p'), γ spectrum from, 6: 1918(J)
range-energy curves for, in nuclear emulsions, 6: 397(J)
triton absorption cross section of, 6: 1859
Lithium isotopes Li^8
cross section for formation of, by Li^7 (n,γ), 6: 1873(J)
range-energy curves for, in nuclear emulsions, 6: 397(J)
Litter sizes
effects of radiation on rabbit, 6: 504(R)
Little Mac Claims
torbernite occurrence at, 6: 214
Liver
carbohydrate metabolism in, 6: 758
carbon C^{14} distribution in fatty acids of, 6: 169(J)
effects of sub-total hepatectomy on response to colloidal Au^{198} injection, 6: 1379(R)
metabolism in, effects of radiation on, 6: 56(J), 506(R), 1383(J)
Lode deposits
exploration of, in Morocco, 6: 1460(J)
exploration of, for U in Grant Co., New Mexico, 6: 1457
Lode deposits (uraniferous)
prospecting of, in Larimer Co., Colorado, 6: 1456
Los Alamos Fast Reactor
gamma spectra of, 6: 998
Los Alamos Water Boiler
design and operating characteristics of, 6: 990
design of Supo, 6: 1852
gamma spectra of, 6: 998
Louisville Univ.
progress reports, 6: 1177(R)
Luminescence
(See also as subheading under specific materials. See also Fluorescence; Phosphorescence.)
decay of, of LiI, NaI, KI, NaI(Tl), and KI(Tl), 6: 302(J)
in firefly extracts, 6: 1134
potentiometric measurement of, in isolated spinach and mustard chloroplasts, 6: 1601(J)
Lutetium isotopes Lu^{175}
gamma emission and K/L conversion electron ratios, 6: 1046
Lutetium isotopes Lu^{176}
nuclear magnetic moment of, and comparison with nuclear shell model, 6: 342(J)
Lymph
effects of x radiation on cellular composition of, 6: 1599
Lymph volume
determination of, 6: 1117(J)
determination of, using I^{131}-labeled albumin, 6: 25
Lymphocytes
effects of, in treatment of radiation injuries, 6: 1612
Lysozyme
effects of ACTH on, 6: 9

M-capture
(See the subheading electron capture under specific materials.)
MacGregor Claims (Colorado)
torbernite occurrence at, 6: 214

Magnesium
cathodic sputtering of, 6: 252
corrosion of commercially pure and high purity, 6: 228(R)
determination of, in Na metal, 6: 815
electric conductivity of, change on melting, 6: 1264(J)
heat of combustion of, 6: 1131(J)
infrared spectra of, 6: 161(J)
solubility of, in Cd, 6: 235(R)
spectrographic determination of, 6: 1144(J)
spectrographic determination of, in organic solids, 6: 158
Magnesium (liquid)
electric conductivity of, 6: 1264(J)
Magnesium alloys
bibliographies on, 6: 904
Magnesium–aluminum alloys
corrosion mechanism of, 6: 248(J)
reaction with steam, 6: 1257(J)
stress–corrosion mechanism in, 6: 1219(J)
stretcher–strain markings in, 6: 1252(J)
Magnesium–aluminum–copper alloys
aging of, x-ray-diffraction study, 6: 244(J)
constitution diagrams of, 6: 243(J)
Magnesium–aluminum–silicon alloys
grain refinement of, effect of various additions, 6: 250(J)
Magnesium–aluminum–zinc alloys
corrosion mechanism of, 6: 248(J)
Magnesium–cadmium alloys
entropy and specific heat of, 6: 1472(R)
heats of formation of, 6: 1480(J)
thermodymanic properties of, 6: 1479(J)
Magnesium complexes
dissociation of, in aqueous solutions, 6: 564(J)
equilibrium constants of, 6: 535
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
Magnesium–iron alloys
corrosion of, effect of composition and heat treatment, 6: 228(R)
Magnesium–iron–phosphorus alloys
corrosion of, effect of composition and heat treatment, 6: 228(R)
Magnesium isotopes
relative yields from γ reactions (γ,n) and (γ,p) on, 6: 1874(J)
Magnesium isotopes Mg^{23}
beta spectra and half lives of, 6: 735
Magnesium isotopes Mg^{24}
gamma reactions (γ,n), 6: 1874(J), 1876(J)
inelastic scattering of deuterons by, 6: 1888(J)
proton reactions (p,n), 6: 737
Magnesium isotopes Mg^{25}
deuteron reactions (d,α) and (d,p), 6: 1533
gamma reactions (γ,p), 6: 1874(J), 1876(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
Magnesium isotopes Mg^{26}
deuteron reactions (d,p), 6: 1533
gamma reactions (γ,p), 6: 1874(J), 1876(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
Magnesium nitrates
distribution of, between water and 1-hexanol, 6: 102
Magnesium oxides
recrystallization and sintering mechanism of, 6: 117
thermal conductivity of, 6: 204
Magnesium sulfates
electrolytic dissociation of, 6: 841(J)
Magnesium–thorium–zirconium alloys
metallurgical properties of, 6: 903(R)
Magnesium–uranium alloys
metallography of, with polarized light, 6: 1228
Magnesium–zirconium alloys
constitution diagrams of, 6: 591(R)
Magnetic fields
(Including magnetic lenses, flux measurements, etc.; see also as subheading under the specific device; see also Electric fields.)
circuit for stabilization of, for the Louvain cyclotron (Belgium), 6: 1542(J)
correction of magnetic lenses in beta spectrometry, 6: 281(J)
focusing of charged particles with, 6: 450(J)
influence of, on angular correlation of emitted particles, 6: 346(J)
magneto-hydrodynamic effects on thermal convection, 6: 1715(J)
theory of H_2 and D_2 in, 6: 1828(J)
vacuum polarization of, 6: 1365(J)
Magnetic moments
(See also subheadings for nuclear, atomic, and molecular magnetic moments under specific materials.)
Magnetic moments (cont'd.)
measurement of, applied to chemical analysis, 6: 1142(J)
theory of, of a nucleon, 6: 684(J)
Magnetic susceptibility
methods of measurement of, 6: 1433
Magnetite
neutron diffraction analysis of, 6: 1038(J)
recovery of V from titaniferous, 6: 911)J)
Magnetrons
(See Electron tubes.)
Maize
(Indian corn; Zea mays)
mutations in plants from irradiated seed of, 6: 774(J)
response of, to inoculation with Ustilago zeae, 6: 499
sterility in, involving gene-cytoplasm interaction, 6: 2
Malic acid
biosynthesis of, by conversion of α-ketoglutaric-1,2-C_2^{14} acid in pigeon breast muscle, 6: 1620(J)
Malonic acid (labeled)
decarboxylation of, C^{14} isotope effect in, 6: 831
Malonic acid, esters
hydrolysis of, carbonate cleavage in, 6: 817
Malononitrile
radiosensitivity effects of, 6: 51(J)
Manganese
neutron resonance cross sections of, 6: 1304(R)
neutron scattering cross sections of, 6: 1304(R)
paramagnetic resonance absorption in solutions containing, 6: 1312(J)
Manganese alloys
sigma phase in, 6: 1246(J)
Manganese–chromium alloys
phase studies of, 6: 1259(J)
Manganese compounds
hyperfine structure of, 6: 1312(J)
paramagnetic resonance and hfs of divalent, 6: 1847(J)
Manganese(II) fluorides
neutron diffraction analysis of, 6: 1548
Manganese isotopes Mn^{53}
from Cr^{53}(p,n), energy levels of, 6: 359
Manganese isotopes Mn^{54}
from Cr^{54}(p,n), energy levels of, 6: 359
Manganese isotopes Mn^{55}
mass of, compared to Fe^{55}, 6: 434(J)
proton reactions (p,n), 6: 407(R), 1877
Manganese–titanium alloys
phase studies of, 6: 1732
Manganese–uranium alloys
magnetic susceptibility of, 6: 1433
Mannitol (labeled)
synthesis of, 6: 1700
Mannose (labeled)
synthesis of, 6: 1430
Manometers
(See also Pressure gages; Vacuum gages.)
design and performance of, 6: 944(J)
Mass spectrography
(See also subheading mass spectrographic analysis under specific materials.)
ionization potentials determined by, 6: 291(J)
recent developments in, 6: 1793
Mass spectrometers
(See also Ion sources.)
application of, to high vacuum problems, 6: 585(J)
automatic recording, operation of, 6: 288
design of, 6: 473(P), 1284(J)
design and resolution of, 6: 1793
electrostatic-time-of flight, design and operation of, 6: 289
ion source for, 6: 1574(P), 1580(P)
as leak detectors and for analyzing H-D mixtures, 6: 1371
mass doublet comparisons with, 6: 991(J)
neutralization of space charge in positive ion beams in, 6: 636(J)
suppression of spurious ions in, 6: 972(J)
Mass synchrometer
performance of, 6: 626
Massachusetts Inst. of Tech.
progress reports, 6: 251(R), 676(R), 1448(R), 1449(R), 1470(R), 1471(R), 1516(R), 1517(R), 1518(R), 1519(R), 1520(R)
progress reports on solid solutions and grain boundaries, 6: 598(R), 1467(R)
Materials testing
(See also the specific material or equipment concerned or properties being tested; see also Mechanics.)

Materials testing (cont'd.)
equipment for fatigue testing, 6: 193(J)
by gamma-ray transmission, 6: 191
Mathematics
(Including statistics; see also specific problem for application of mathematics; also specific mathematical methods, e.g., Monte Carlo Method; Stochastic methods; etc.; see also Computers; Constants and conversion factors; Perturbation theory; Statistics.) 6: 1561
in analysis of noise, γ spectra, and γ-ray scattering and transmission, 6: 1285
calculation of eigenvalues of differential systems, 6: 953
calculation of orbital and charge-spin correlations, 6: 1364(J)
classification of symmetrical type of convex regions, 6: 1796
convex bodies, symmetrization of, 6: 949
convex regions associated in subspaces, 6: 948
convex sets and additive set functions, 6: 950
difference equation approximations, 6: 952
in neutron transport theory, 6: 1285
Mating
(See also as subheading under the specific animal.)
effects of radiation on, in paramecia, 6: 506(R)
Mechanics
(See also Materials testing.)
book: Dimensional Analysis and Theory of Models, 6: 1204
Melting point apparatus
design of window shield for, 6: 1445
Mercury
boiling and condensing of, 6: 579
heat transfer to and from flowing, 6: 1199
self-diffusion in, 6: 1239(R)
superconductivity of, isotopic factors in, 6: 993(J)
tissue distribution of, in rats, 6: 496(R)
Mercury cathodes
design and use of micro, for electrolysis, 6: 1648
electrodeposition of metals onto, 6: 1393(R)
Mercury isotopes
alpha emission from, 6: 410, 1556
half lives of, 6: 1839
specific heat of, 6: 993(J)
Mercury isotopes Hg^{197}
decay scheme of, 6: 1925(J)
formation of, 6: 496(R)
Mercury isotopes Hg^{198}
energy levels of, 6: 435(J)
half lives of excited states of, 6: 426(J)
isomers of, upper limit to half lives of, 6: 1555
Mercury isotopes Hg^{199}
decay schemes of, 6: 1925(J)
half lives of excited states of, 6: 426(J)
Mercury isotopes Hg^{203}
decay schemes of, 6: 307(J)
Mercury–uranium alloys
chemical analysis of, 6: 545
Merry Widow Claim (New Mexico)
geology of, 6: 1457
Meson beams
production of μ, in cyclotron, 6: 322
Meson spectra
zenithal distribution, 6: 1299(J)
Mesons
(See also Cosmic mesons.)
from C^{12}, by proton reactions, 6: 974
creation of, by fast neutrons passing through nuclei, theory, 6: 330(J)
π-μ decay model for, 6: 1756
detection and measurement, decay schemes, and production of, 6: 1756
detection of τ and κ and formation of π, 6: 1512
fields, intermediate interaction of nucleons with, 6: 1825(J)
formation and scattering of, theory, 6: 1544
interactions and decay of, 6: 673(J)
interactions with electrostatic field, 6: 1369(J)
interactions with nucleons and photons, 6: 1055(J)
mass and decay schemes of, measurement of, 6: 1515(J)
multiple production of, by cosmic particles, 6: 267(J)
multiple production of, by nucleon-nucleon collisions, theory, 6: 674(J)
multiple production of, theory, 6: 325(J)
paths of, in cyclotrons, 6: 378
production of, as a function of atomic number, 6: 917
production of, by cosmic particles in nuclear emulsions, 6: 259(J)
production of, by nucleon-nucleon collisions, 6: 1301(J)
production of, by proton-proton collisions, 6: 611(J)
production of, multiplicity of, 6: 1513
Mesons (cont'd.)
production of, theoretical model for, 6: 1756
properties of cloud of, around nucleons, 6: 750(J)
relative masses of π and μ, 6: 1289(J)
review of properties of, 6: 977(J)
scattering and residual range of, in nuclear emulsions, 6: 391(J)
scattering of, by nucleons, 6: 1039(J)
scattering of, in gas of diffusion cloud chamber, 6: 315, 316
scattering of, in Pb plates, 6: 978(J)
theory of, 6: 745(J), 746(J), 1816
theory of, limitations of, 6: 1306(J)
Mesons (κ)
decay schemes of, 6: 1756
mass and decay of, 6: 1818, 1827(J)
Mesons (μ)
decay of, 6: 1270(J), 1821(R)
decay of, relation to beta decay, 6: 1481
disintegration of, continuous γ spectra in, 6: 1300(J)
energy of disintegration electrons of, 6: 1298(J)
ionization in O by, 6: 1824(J)
range distribution of, 6: 1897(J)
range straggle of positive, 6: 320
rest mass and mean lifetime of, 6: 1297(J)
scattering of, by nuclei, 6: 1818
star formation, 6: 322
stopping of negative, in nuclear emulsions, 6: 322
uranium fission induced by, 6: 1860
Mesons(π)
absorption and scattering of, in nuclear emulsions, 6: 672(J)
angular distribution of, from proton-proton collisions, 6: 669
beta decay of, 6: 976(J)
charge-exchange scattering of, theory, 6: 326(J)
decay of negative, in nuclear emulsions, 6: 327(J)
decay of, selection rules for, 6: 318
decay schemes of, 6: 655
electromagnetic interference effects in charged π, p scattering, 6: 1514
field theory and absorption and scattering of, 6: 1819
formation and decay of neutral, in proton bombardment of C, 6: 1865
formation, decay schemes, and scattering of, 6: 1818
gamma spectra from decay of neutral, 6: 362
from helium and H by photon reactions, 6: 324
from hydrogen and D by photon reactions, 6: 671
interactions of fast, with nuclei, 6: 1826
interactions of, with C nuclei, 6: 1823(J)
mass and potential of, 6: 1887
mass of, from theory of p-n and p-p interactions, 6: 1894(J)
negative, from deuterium by photon reactions, 6: 321, 323, 1005
neutral, from Be^9, B^{10}, B^{11}, C^{12}, O^{16}, H, and D by proton reactions, 6: 670
neutral, from deuterium by photon reactions, 6: 973, 975
nuclear scattering cross sections of negative, 6: 319
photoproduction and properties of neutral, 6: 317
production of, at relativistic nucleon energies, 6: 1820
production of, by neutrons on protons, by protons on protons, by protons on C, by deuterons on C, 6: 1821(R)
properties of, review of, 6: 1822(J)
reactions of positive, with deuterons, 6: 328(J), 329(J)
scattering of, in Al, Cu, and Pb, 6: 1821(R)
scattering of, by H and He, 6: 315
scattering of negative, by H, 6: 316
scattering of positive, by He, 6: 1817
Mesons(τ)
decay schemes and mass of, 6: 1818
Metabolism
(See also as subheading under specific materials and organisms; see also the subheadings dosage determinations; metabolic effects; mineral metabolism; etc., under specific materials; see also Plant metabolism.)
in bacteria, as studied by ethanol synthesis in Pseudomonas lindneri, 6: 1619(J)
effects of x radiation on, 6: 510(R)
of lipoproteins, effects of radiation on, 6: 38
Metal coatings
(Uses, characteristics, and preparation including metal spraying, vacuum vaporization, and chemical deposition.)
thickness measurements of, on cylinders by x-ray-diffraction analysis, 6: 1486
Metal crystals
recrystallization of, mechanism of, 6: 117
x-ray asterisms from deformed, 6: 1254(J)
Metal halides
preparation of, apparatus for, 6: 1565(P)

Metal powders
(See also specific metal powders.)
sintering of, bibliographies, 6: 602
Metal trichlorides
high-temperature hydrolysis of solid, 6: 1753
Metallic films
(See also headings for foils identified by material.)
electric conductivity of, theory, 6: 239(J)
Metallic foils
scattering of charged particles by, 6: 398(J)
Metallurgical Lab., Univ. of Chicago
progress reports, 6: 732(R)
Metallurgical Labs., Sylvania Electric Products, Inc.
progress reports, 6: 603(R)
Metals
(See also specific metals; see also Alloys; Porous metals.)
bonding of, to glass, role of surface tension in, 6: 202
contamination of, by I^{131}, 6: 883
corrosion of, polarographic study, 6: 1450(R)
corrosion of, symposium on, 6: 210
creep mechanism in, 6: 1733
creep of, equipment for testing, 6: 192
crystal structure of, theory, 6: 1660
deuteron range-energy relation in, 6: 1032(J)
electrolytic cutting of, 6: 1738
fatigue of, at high temperatures, 6: 877
fatigue of, research programs in England, Sweden, France, and Switzerland on, 6: 1722
fatigue testing equipment for, 6: 193(J)
interactions of, with ceramics at high temperatures, 6: 205
melting and sintering of, in vacuum, 6: 246(J)
metallography of, with polarized light, 6: 1228
oxidation of, cubic law of, 6: 1462
recrystallization of, 6: 618(R)
scaling behavior of, 6: 1731
surface area of, apparatus for determination of, 6: 897
thermodynamic properties of, 6: 1471(R)
vapor pressure chart for, 6: 1734
welding of, by resistance method, 6: 181
Metals (liquid)
(See also specific metals and alloys.)
heat transfer characteristics of, effects of wetting on, 6: 186(R)
heat transfer to and from, in annuli and circular tubes, 6: 1198
thermal conductivity of, measurement of, 6: 1444(J)
Metals Research Lab., Carnegie Inst. of Tech.
progress reports, 6: 599(R), 601(R), 1473(R)
Meteorites
ratio of O isotopes in, 6: 1744(J)
Meteorological instruments
(See also specific instruments.)
design of, for study on turbulence and diffusion of particulate matter in lower layers of the atmosphere, 6: 1516(R), 1517(R), 1518(R), 1519(R)
Meteorology
(See also as subheading under specific sites, installations, and geographic areas; see also the subheading meteorological factors under phenomena affected; see also Atmosphere; Stack disposal.)
atmospheric diffusion from a point source, 6: 979
intensities of atmospheric turbulence, 6: 331(J)
turbulence and diffusion of particulate matter in atmosphere, 6: 676(R)
vertical wind gradient apparatus, 6: 938
Methane
halo derivatives, quadrupole spectra and couplings of Cl^{35} in, 6: 1308(J)
ionization potential of, by mass spectrography, 6: 291(J)
molecular vibration of, and of its deuterated forms, 6: 137(J)
thermal capacity of, adsorbed on TiO_2, 6: 868
Methane, fluoro-
virial coefficients of, 6: 128(J)
Methanol
adsorption of, on C, 6: 1425(R)
proton resonances in, effects of temperature on, 6: 1671(J)
Methionine
determination of, by nitroprusside reaction, 6: 812
role of, in synthesis of adenine thiomethylriboside in yeasts, 6: 1072
Methylamine
protective action of, against x radiation, 6: 1385(J)
Methylene blue
effects on concentration of K in erythrocytes, 6: 791
Mice
effects of air blasts on, 6: 12
effects of x radiation on, 6: 45
quarters for, criteria for air conditioning, 6: 1373
Mice (cont'd.)
a transmissible disease in, characterized by anemia, leukopenia, and erythropoietic splenomegaly, 6: 1071
Microörganisms
(See also Bacteria; Yeast; etc.)
effects of radiation on, 6: 916(R)
Microwave spectroscopy
(See also subheading spectra under specific materials.) 6: 1750(R)
in studies of OCS, 6: 340(J)
Microwaves
absorption of, 6: 1782(R)
detection and measurement of, 6: 1750(R)
determination of collision probability for slow electrons in gases using, 6: 1490
generation of, 6: 1750(R)
resonant behavior of spheroidal cavity system in region of, 6: 253
tubes for generation of, design, 6: 1782(R)
Minerals
(See also specific minerals; see also Radioactive minerals.)
beneficiation of, 6: 251(R)
colorimetric analysis of, for Th, 6: 1401
electrostatic separation of, bibliography on, 6: 1423
flotation of, tracer studies of, 6: 251(R)
radioactive decay rate and age estimations of, 6: 425(J)
uranium determination in, by fluorimetric analysis, 6: 1404(J)
Minnesota Mining and Manufacturing Co.
progress reports, 6: 1701(R)
Minnesota Univ.
progress reports, 6: 891(R)
Missouri
uranium distribution in, 6: 1728(J)
Mitochondria
oxidation of pyruvate in suspensions of, 6: 760
Mitosis
(See also the subheading mitotic effects under materials, radiations, etc., causing mitosis; see also Chromosomes; Genetics.)
mechanics of, and effects of colchicine on, 6: 502(R)
Molds
(See also Fungi.)
effects of radiation on, 6: 916(R)
Molecular beams
(See also Ion beams.)
focusing by magnetic field, theory and apparatus for, 6: 1335(J)
Molecular structure
(See also as subheading under specific materials.)
interpretation and theory of, 6: 1302(R)
relation to nuclear relaxation time in hydrocarbons, 6: 1418(J)
sum rules for frequencies of isotopic molecules, 6: 1417(J)
theory of, 6: 138(J)
Molecules
centrifugal distortion in asymmetric, 6: 1521
Molybdenum
coating, fabrication, mechanical properties, and production of, review of current status of, 6: 1466
corrosion of, by Bi–Pb eutectic, 6: 901
corrosion of, by liquid Bi, 6: 900
determination of, in U-Mo alloys, 6: 544
effects of impurities on the band ductility of cast, 6: 1740(J)
electric conductivity of, effect of elastic deformation on, 6: 241(J)
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
proton reactions (p,n), 6: 1859
proton reactions (p,n), thick-target yield in, 6: 1535
separation of, from fission products, 6: 1424(R)
thermoelectric power of, effect of cold work and annealing on, 6: 1741(J)
vapor pressure between 2151 and 2462°K, 6: 88
volumetric determination of, 6: 1402(J)
welding of, 6: 227
x-ray spectra of, 6: 97(J)
Molybdenum–aluminum compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Molybdenum complexes
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
Molybdenum isotopes
decay schemes of, 6: 1907
yields of, in U^{235} fission, 6: 1327(J)
Molybdenum isotopes Mo^{98}
energy level diagram of, 6: 419(J)
Molybdenum isotopes Mo^{97}
binding energy of, calculation, 6: 333(J)
Molybdenum isotopes Mo^{99}
yield of, from proton-induced fission of U, 6: 1856

Molybdenum single crystals
crystal structure and plastic deformation of, 6: 1736(R)
Molybdenum–tantalum alloys
phase studies of, 6: 1256(J)
Molybdenum–uranium alloys
chemical analysis of, 6: 544
Molybdenum–zirconium alloys
constitution diagrams of, 6: 591(R)
crystal structure of, 6: 249(J)
Monazite
(See also Thorium ores; Uranium ores.)
fluorimetric analysis of, for U, 6: 1136
Morocco
exploration of uraniferous phosphate deposits in, 6: 1461(J)
identification of pitchblende and tungsten minerals in, 6: 1460(J)
Morphine (labeled)
synthesis of, 6: 1180(J)
Morrison formation
geology of, 6: 1458
Mortars
(See also Cements.)
properties of, 6: 1437
Mound Lab.
progress reports, 6: 960(R), 1278(R)
Mullite
thermal conductivity of, 6: 204
Multiple sclerosis
radiotherapy of, indirect irradiation in, 6: 66(J)
Multiplication factor
(See also as subheading under reactors.) 6: 1000
Muscles
electrolyte retention in, following x irradiation, 6: 1077
Mutations
(See also subheading mutation under specific organisms.)
dose–frequency curve for radioinduced, 6: 777(J)
as explanation for inheritance of reduced vigor, 6: 140
induced by x radiation, in Drosophila, 6: 8, 770(J)
induced by x radiation, orgin of, 6: 769(J)
in plants from irradiated seeds, 6: 32
radioinduced in fungi, 6: 1085
theory of, 6: 6
Myristic acid
incorporation of, into phospholipides by rats, 6: 798(J)

Naphthalene
absorption spectra and fluorescence of, 6: 1695
1,4-Naphthoquinone, 2-methyl-
effects on concentration of K in erythrocytes, 6: 791
1-Naphthylamine, N-phenyl-
fluorescence of, α- or γ-induced, 6: 653(R)
National Bureau of Standards
progress reports, 6: 1279(R), 1497(R)
National Research Corp.
progress reports, 6: 223(R)
Neodymium
thermodynamic properties of, 6: 560, 840
Neodymium chlorides
activity coefficients, conductances, and transference numbers of, 6: 562
activity coefficients of, in aqueous solutions, 6: 558
absorption spectra of, 6: 1628
thermodynamic properties of, 6: 560, 839
transference numbers of, 6: 563
Neodymium compounds
thermodynamic properties of, 6: 840
Neodymium isotopes
cross sections for formation of, in neutron irradiation of Nd_2O_3, 6: 1424(R)
decay schemes of, 6: 1907
Neodymium oxalates
thermodynamic properties of, 6: 560
Neodymium oxides
heat content, specific heat, and entropy of, 6: 147(J)
Neodymium sulfates
paramagnetic resonance absorption in, 6: 1359(J)
Neon
collision probability for slow electrons in, 6: 1490
Neon isotopes Ne^{20}
binding energy of, calculation, 6: 333(J)
Neon isotopes Ne^{21}
spin and parity of, 6: 1859

Neptunium
discovery and identification of, lecture on, 6: 1835
Neptunium isotopes Np^{238}
decay schemes of, 6: 736
Neptunium isotopes Np^{237}
nuclear properties of, 6: 1928
x-ray emission from, 6: 413
Nerve cells
effects of ultraviolet radiation on, in grasshoppers, 6: 43(J)
Netherlands–Norwegian heavy water reactor
(See Jeep reactor.)
Neutrinos
distinction between neutrino and antineutrino, 6: 1368(J)
emission of, from P^{32}, 6: 1909
rest mass of, upper limit for, 6: 1837(J)
theory of, in Te^{130} double β decay, 6: 1793
Neutron beams
collimation of, 6: 1535
preparation of very low energy, 6: 493(J)
Neutron cross sections
(See also as subheading under specific materials; see also main and subheadings for specific neutron cross sections, e.g., Neutron absorption cross sections; Neutron capture cross sections; see also the subheading neutron reactions under materials.)
measurement of, 6: 493(J), 980, 1023(J), 1503, 1860
theory of, 6: 686
Neutron diffraction analysis
(See also as subheading under specific material.)
of single crystals, 6: 619(J)
Neutron scattering cross sections
(See also as subheading under specific materials.)
of protons, effect of potential well shape on, 6: 1340
theory of, 6: 1830
Neutron shielding
(See also as subheading under heading for apparatus shielded.)
design of, lecture on, 6: 1360
theory of, 6: 441(J)
Neutron sources
design of, 6: 480(P)
Neutron spectra
(See also as subheading under specific materials; see also the subheading neutron emission under specific elements and isotopes.)
from Mn^{55}(p,n) reaction, 6: 1877(J)
Neutron spectrometers
design of, 6: 641
Neutrons
(See also Cosmic neutrons; Fast neutrons; Neutron beams; Neutron sources; Photoneutrons; Thermal neutrons.)
from (α,n) reactions in impurities in fissile material, 6: 1536
attentuation of, in water and paraffin, 6: 441
beta decay of, theory, 6: 1920(J)
from C^{12}(d,n), angular distribution of, 6: 708(J)
cataract production by, 6: 505
chemical effects of capture of, 6: 1679(J)
coherent scattering of, by hydrocarbons, 6: 1903(J)
decay of, 6: 678(J)
density-indicator for, 6: 1583(P)
disintegration of He by, 6: 1004
dosage determination, 6: 1(R)
effects on barley seed, 6: 41(J)
effects on enzymes, 6: 40(J)
effects on semiconductors, 6: 557(J)
emission of, from spontaneous fission of Th, 6: 1851(J)
exchange force in interactions of, with protons, 6: 1326
from fission of U^{235}, energy distribution of, 6: 698
inelastic scattering of, by deuterons, 6: 1031(J)
interactions of, with electrons, 6: 679, 1832(J)
interactions of, with protons, 6: 386, 1346(J)
magnetic lens for focusing of, 6: 1860
mass of, compared with H mass, 6: 349(J)
mass of, from nuclear reaction energies, 6: 992(J)
mass of, from $T(p,n)He^3$, 6: 1859
π^--mesons from, in deuterium by photon reactions, 6: 323
multiplicities of, from μ-meson capture in Pb, 6: 1759(J)
polarization and scattering of, by ferromagnetic materials, 6: 1038(J)
polarization in scattering of, by protons, 6: 715
production of, by (α,n) reactions in Be, 6: 1537
radioactivity of, 6: 1909
reflection of, from single crystals, 6: 493(J)
scattering of, in air, 6: 1(R)
scattering of, by deuterons, theory, 6: 720(J)

Neutrons (cont'd.)
scattering of, by meson fields, theory, 6: 1042(J)
scattering of, by protons, 6: 381, 387, 1043(J), 1340
scattering of, theory, 6: 724(J)
star production by, in nuclear emulsions, 6: 1534
total reaction cross sections for, with Be, C, N, and Na, 6: 1017(J)
transmission in polycrystalline media, extinction effects on, 6: 1341
transport theory, 6: 332(J), 384, 1285
New Mexico (Grant Co.)
exploration of Lode deposits in Merry Widow Claim and White Signal District for U, 6: 1457
New York Univ.
progress reports, 6: 653(R), 677(R), 1392(R), 1749(R)
Nichrome
(See Nickel alloys.)
Nickel
angular distribution of photoneutrons from, 6: 1861
anion exchange of, in HCl, 6: 1689(J)
cathodic sputtering of, 6: 252
corrosion of, by acids, 6: 1217
corrosion of, by H_2O_2, 6: 240(J)
creep mechanism in, 6: 1733
deuteron range-energy relation in, 6: 1032(J)
electrolytic separation from V, 6: 90(R)
electroplating of, 6: 599(R)
neutron cross sections of, 6: 1526
neutron scattering cross sections of, 6: 1304(R)
scattering of neutrons by, 6: 980
Nickel alloys
corrosion of, by Bi–Pb eutectic, 6: 901
corrosion of, by H_2O_2, 6: 240(J)
corrosion of, by liquid Bi, 6: 900
permeability of inconel to He, 6: 272
Nickel–aluminum alloys
crystal structure of, in β phase, 6: 242(J)
Nickel–aluminum compounds (intermetallic)
x-ray-diffraction analysis of, 6: 199
Nickel–chromium–cobalt–iron alloys
creep properties of, effects of cold-work on, 6: 1207
Nickel complexes
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
Nickel compounds
chelation of, with β-diketones, 6: 1634
Nickel–copper alloys
diffusion in, 6: 603(R)
Nickel–copper couples
porosity of, metallographic studies on, 6: 1474
Nickel–copper–zinc alloys
coating, corrosion, and physical properties of, 6: 1465
Nickel(II) fluorides
neutron diffraction analysis of, 6: 1548
Nickel–gold alloys
phase studies of, 6: 1467(R)
Nickel–iron alloys
phase transformations in, 6: 600(R)
porous, powder metallurgy and physical properties of, 6: 1233(R)
strains in, caused by martensitic transformation, 6: 594
surface tension of, effect of composition on, 6: 205
Nickel–iron–tantalum alloys
composition and physical properties of, 6: 909(J)
Nickel isotopes Ni^{56}
formation and half lives of, from Zn spallation, 6: 1864
Nickel isotopes Ni^{59}
binding energy of, 6: 989(J)
gamma reactions (γ,n), 6: 1871(J)
Nickel isotopes Ni^{59}
mass of, 6: 368(J)
Nickel isotopes Ni^{60}
binding energy of, 6: 989(J)
Nickel isotopes Ni^{65}
neutron capture cross sections, 6: 1628
Nickel(II) nitrate systems
phase studies of 1-hexanol-, 6: 81
Nickel oxides
ionization of, 6: 541(J)
Nickel–titanium alloys
creep mechanism in, 6: 1733
Nickel–uranium alloys
magnetic susceptibility of, 6: 1433
Nickel–vanadium alloys
structure of σ phase of, 6: 1476(J)
Nicotine
biosynthesis of, mechanism of, 6: 1618
tissue distribution and excretion of, 6: 74(J)
Niobium
colorimetric determination of, with thiocyanate, 6: 1143(J)
corrosion of, by Bi–Pb eutectic, 6: 901
corrosion of, by liquid Bi, 6: 900
extraction of, from sovite, 6: 219(J)
purification of, by volatilization or solution of chlorides, 6: 847(J)
separation from Ta, 6: 846(J)
spectrophotometric determination of, 6: 1405(J)
x-ray spectra of, 6: 97(J)
Niobium borides
crystal structure and properties of, 6: 120
Niobium bromides
trouton constants of, 6: 810(J)
Niobium chlorides
trouton constants of, 6: 810(J)
Niobium–chromium alloys
crystal structure of, from x-ray-diffraction data, 6: 1249(J)
Niobium fluorides
vapor pressure of, 6: 810(J)
Niobium isotopes Nb^{91}
internal conversion and isomeric transition of, 6: 419(J)
Niobium isotopes Nb^{92}
electron capture, 6: 419(J)
Niobium isotopes Nb^{95}
preparation of carrier-free, 6: 1422
Niobium isotopes Nb^{94}
internal conversion and isomeric transition of, 6: 409
Niobium isotopes Nb^{95}
decay schemes of, 6: 650(R)
internal conversion and isomeric transition, 6: 419(J)
Niobium isotopes Nb^{96}
decay schemes of, 6: 419(J)
Niobium nitrides
preparation of, 6: 1642(J)
Niobium oxides
electrolysis of, in phosphate melts, 6: 811(J)
Niobium phosphides
preparation of, by electrolysis, 6: 811(J)
Niobium–tantalum alloys
tensile properties of, 6: 1475(R)
Nitric acid
decontamination of, by distillation, 6: 882(R)
Nitrides
fluorination of, 6: 134(J)
Nitrogen
adsorption of, on C, 6: 1425(R)
collision probability for slow electrons in, 6: 1490
compressibility isotherms and thermodynamic functions of mixtures of, with H_2 and NH_3, 6: 1275(J)
compressibility of, at 3097 to 6292 atm, 6: 187(J)
diffusion of, in Zr, 6: 898
effects of interstitial, on superconductivity of V, 6: 1739(J)
effects on crystal structure of Zr, 6: 229(R)
fixation of, by photosynthetic bacteria, 6: 71
fixation of, in a crossed discharge, 6: 620
neutron and proton charge-exchange reactions in, 6: 1881(J)
neutron total cross sections for, 6: 1017(J), 1525
proton scattering cross sections of, 6: 1546
radiosensitivity effects of, 6: 48
scattering of x radiation by, 6: 400(J)
surface reaction of, with Zr, 6: 898
thermo-osmosis of, through rubber, 6: 1776(J)
transition probabilities for N_2 by dipole velocity operator, 6: 256
Nitrogen isotopes
energy states of, 6: 1859
Nitrogen isotopes N^{13}
energy levels and nuclear spin of, 6: 708(J)
yield of, from $C^{12}(p,\gamma)$, 6: 1879(J)
Nitrogen isotopes N^{14}
binding energy of, calculation, 6: 333(J)
deuteron reactions (d,α), 6: 1870(J)
energy levels of, 6: 367(J), 1329(J)
gamma (γ,n) cross sections, 6: 1332(J), 1861
gamma emission of, from $C^{13}(p,\gamma)$, 6: 1875(J)
neutron reactions (n,α) and (n,p), 6: 1007(J)
neutron total cross sections of, 6: 407(R)
proton reactions (p,γ), 6: 1535

Nitrogen isotopes N^{15}
binding energy of, calculation, 6: 333(J)
deuteron reactions (d,p), 6: 1870(J)
formation of, by the reaction N^{14} (d,p), 6: 1870(J)
infrared spectra of, isotope shift in, 6: 445
isotope effect in thermal deammonation of phthalamide, 6: 1118
Nitrogen mustards
chemical effects of x radiation on, 6: 1680(J)
effects on cell division in Paramecium, 6: 1108
genetic and physiological effects of, 6: 506(R)
Nitrogen oxides
effects on formation of triplet positronium in gases, 6: 1305
ionization potential of, by mass spectrography, 6: 291(J)
Nitrous acid
reaction with alkylhydroxylamines, 6: 1628
Noise
(Including theoretical calculations and experimental observations.)
mathematical analysis, 6: 1285
study of nonlinear devices by correlation methods, 6: 1751
theory of thermal, in calorimeters, 6: 960(R)
Norman Bridge Lab. of Physics, Calif. Inst. of Tech.
progress reports, 6: 444(R), 446(R)
North Carolina State Coll.
progress report, 6: 1446(R)
Norwegian–Dutch Heavy Water Reactor
(See Jeep reactor.)
NRX reactor
(Canada)
general description of, 6: 355(J)
shutdown of, effect of delayed neutrons on, 6: 1831
Nuclear aircraft
turbojet engines for, 6: 1589
Nuclear emulsions
(See also Photographic film detectors; Photographic films.)
blackening of, by β particles, 6: 1287
calibration of, 6: 661(J)
calibration of, for scattering constant, 6: 1807(J)
development of latent image in, 6: 1289(J)
electron–electron scattering determinations with, 6: 917
grain density of electron tracks in, 6: 1293(J)
loading of, with wires, 6: 308(J)
measurement of α-particle and triton tracks in, 6: 644
measurement of thickness changes in, vs. humidity, 6: 298
in μ-meson mass determinations, 6: 1297(J)
multiple coulomb scattering of electrons and protons in, 6: 1550(J)
nuclear disintegrations produced in, by cosmic rays, 6: 259(J), 1761(J)
preparation of, and cosmic particle tracks in, 6: 1512
range-energy relations of electrons in, 6: 1295(J)
range of protons and mesons in, 6: 391(J)
sensitivity of, to x radiation, 6: 311(J)
stars produced in, by neutrons and protons, 6: 1534
stars and single tracks in, analysis and origin, 6: 1267(J)
techniques for studying nuclear collisions with, 6: 1328(J)
thickness measurement of, 6: 642
tracks of fast C^{12} nuclei in, 6: 656
Nuclear engineering
contribution of, to nuclear energy development, lecture on, 6: 1188
curriculum at North Carolina State College in, 6: 1194
curriculum of the Oak Ridge School of Reactor Technology, 6: 1192
impact of atomic energy on training of engineers, lecture on, 6: 1191
results of a questionnaire on training programs in, 6: 1193
role of, in nuclear energy development, Third Annual Oak Ridge Symposium 1951, 6: 1186
role and training of nuclear engineers, lecture on, 6: 1187
scope of, lecture on, 6: 1190
Nuclear magnetic moments
apparatus for measurement of, 6: 1849(J)
hyperfine structure anomaly in measurements of, 6: 1839
and j—j coupling shell model, 6: 1845(J)
measurement of, by nuclear resonance absorption, 6: 995(J)
methods of measurement, 6: 1307(J)
Nuclear magnetic resonance
theoretical interpretations of multiple lines of, 6: 351(J)
Nuclear models
energy levels of, 6: 691(J)
in fission, 6: 1840
for light nuclei, 6: 1839
Nuclear models (shell)
and beta decay, 6: 740(J)
comparison of, with atomic shell structures, 6: 685(J)
discontinuities in neutron and proton binding energies, 6: 1424(R)
Nuclear models (shell) (cont'd.)
energy variation of asymmetric, 6: 1934(J)
magic numbers, 6: 1314(J)
nuclear magnetic moments using j—j coupling, 6: 1845(J)
in explanation of β-decay theory, 6: 408
Nuclear particles
(See also the specific particle concerned; see also Elementary particles.)
angular correlations of, in nuclear resonance reactions, 6: 374(J)
angular correlations of emitted, influence of magnetic fields on, 6: 346(J)
density of, in the nucleus, 6: 686
dependence of primary specific ionization upon momentum for high-energy, 6: 1758(J)
derivation of a wave equation for, with two mass states and a positive charge density, 6: 1562(J)
emission of, angular correlations functions, 6: 350(J)
interaction moments of, 6: 335
interactions of, quantum mechanical description of, 6: 683(J)
interactions of, time-dependent, 6: 682(J)
interactions of, with a central pseudoscalar field, 6: 752(J)
multiple scattering of charged, theory, 6: 1902(J)
multiple-scattering theory for fast singly-charged, 6: 1807(J)
pair production in collisions of, 6: 1333(J)
range straggling of nonrelativistic charged, 6: 1897(J)
scattering of, by meson fields, theory, 6: 1042(J)
spin of, relativistic theory of, 6: 457(J)
spin, reactions, and existence of, 6: 1818
Nuclear physics
basic concepts of, lecture on, 6: 1261
proceeding of International Conference on, Sept. 1951, Univ. of Chicago, 6: 1833
research program at the Institute for Nuclear Physics, Hamburg, 6: 1372
research program at the Universities of Brussels and Louvain, Belgium, 6: 1523
summaries of papers presented at "Conference on Problems of Quantum Physics," Copenhagen, Denmark, July 6-10, 1951, 6: 1522
survey of Harwell contributions to, 6: 1524(J)
Nuclear power
(See also Nuclear aircraft.)
application of, to rocket propulsion, 6: 1066
economic and industrial aspects of, 6: 1001(J)
economic aspects of, 6: 1068(J), 1317
heating of building at the Atomic Energy Research Establishment, Harwell, 6: 1068(J)
production of, 6: 489, 490
Nuclear radiation
(See also specific radiations, e.g., Alpha particles; see also subheadings under specific elements and isotopes for emitted radiations, e.g., neutron emission. See also Nuclear reactions.)
angular correlation functions of, 6: 990(J)
theory of scattering of, impulse approximation, 6: 1544
Nuclear reactions
(See also as subheading under specific radiations; see also the subheading nuclear properties and subheadings in the form neutron reactions under specific elements and isotopes; see also Beta decay; Neutron cross sections.)
distribution of products of, theory, 6: 360
energies of, 6: 1533
energy requirements for, calculation of, 6: 1019(J)
excitation functions and cross sections for (p,n), 6: 1022(J)
lecture on, 6: 1261
measurement of, by comparison using an ionization chamber, 6: 1576(P)
photographic technique for study of, 6: 1328(J)
quantum mechanical description of, 6: 683(J)
time-dependent description of, 6: 682(J)
Nuclear structure
(See also as subheading under specific elements and isotopes; see also Nuclear models.)
momentum distribution of nucleons, 6: 1818
wave functions for the p shell, 6: 1364(J)
Nuclear theory
electrical dipole γ cross sections, 6: 1013(J)
triplet force between like nucleons, 6: 1561
Nuclei
(See also subheadings under elements and isotopes for properties and reactions of specific nuclei; also headings beginning with Nuclear.)
acceleration of multiply charged, 6: 379
alignment by magnetic resonance, 6: 1311(J)
alpha decay rates, correlation of, 6: 363

Nuclei (cont'd.)
alpha emission from even-even, 6: 415
alpha emission from medium heavy, 6: 410
angular distribution of γ radiation from polarized, 6: 1842(J)
calculation of final state of, from internal conversion coefficient, 6: 1064(J)
classification of isomers of, 6: 1839
energy and electric quadroupole moments of, 6: 344(J)
energy levels of, use of scintillation spectrometer in studying, 6: 424(J)
excited states and structure of even-even, 6: 1836(J)
finite size of, effect on elastic scattering of electrons, 6: 1904(J)
gamma absorption cross sections, 6: 334
gamma emission of, theory, 6: 963(J)
interaction of, with fast π-mesons, 6: 1826(J)
K-capture of, in relation to Z, 6: 1053(J)
magic numbers, 6: 1314(J)
magnetic resonance of, Bloch formulation for interpretation of, 6: 348(J)
mass of, from nuclear reaction energies, 6: 992(J)
nuclear magnetic moments, non-additivity of, 6: 335
nuclear magnetic moments of, theory, 6: 684(J)
nuclear spin of, theory, 6: 684(J)
packing fraction curves, 6: 1793
photon reactions (γ,n), 6: 364, 1326
photoneutron thresholds of, 6: 706(J)
polarization and alignment of, 6: 1846(J)
proton reactions (p,γ), 6: 337
proton reactions (p,n), excitation functions for, 6: 1022(J)
radiative correction to angular distribution of recoil, from electron scattering, 6: 1545
radii of, review of methods of measurement, 6: 1313(J)
shell structure and properties of, 6: 982
statistical analysis of (γ,p) and (γ,n) reactions of, 6: 1858
surface tension and binding energy of, calculation, 6: 333(J)
vibration-rotation spectra of, 6: 981(J)
Nuclei (cells)
(See also cytological subheadings under organs, organisms, radiations, etc.; see also Chromosomes; Cytochemistry; Genetics; Mitosis; Nucleic acids; Nucleotides.)
analysis of, for ribonucleotides, 6: 112(J)
Nucleic acids
biosynthesis of, and radioautographic measurement of, using P^{32}, 6: 149
effects of radiation on, 6: 1595
incorporation and retention of C^{14} in, 6: 566
metabolism of, bibliographies on, 6: 566
Nucleon showers
theory of, 6: 753(J)
Nucleons
(See also specific nucleons, e.g., Protons.)
deuteron scattering cross sections of, theory, 6: 1547
elastic scattering matrix of, 6: 1306(J)
interactions of, 6: 386
interactions of, theory, 6: 747(J)
interactions of, with external electromagnetic fields, 6: 1838
interactions of, with mesons and photons, 6: 1055(J)
nucleon scattering by, theory, 6: 1894(J)
recoil of, effect on nuclear forces, 6: 748(J)
scalar meson field of, 6: 1825(J)
scattering of, by nucleons, 6: 1052(J)
wave functions of, in momentum space, 6: 1936(J)
Nucleosides
determination of, by nitroprusside reaction, 6: 812
separation of, 6: 1072
synthesis of, in yeasts, 6: 1072
Nucleotides, dihydrodiphosphopyridine
oxidation of, by x radiation, 6: 506(R)
Nucleotides, pyridine diphosphate-
effects on pyruvate oxidation in mitochondria, 6: 760
Nylon
(See Plastics.)

Oak Ridge National Lab.
progress reports, 6: 1485(R)
progress reports on instrument research and development, 6: 277(R)
progress reports, Health Physics Div., 6: 1(R)
Oak Ridge School of Reactor Technology
development and curriculum of, lecture on, 6: 1192
2-Octanone
solubility of metallic nitrate hydrates in, 6: 83
Old and Barnes, Inc.
progress reports, 6: 403(R)
Opal (uraniferous)
occurrence of, in Argentina, 6: 215(J)
Oregon Univ.
progress reports, 6: 59(R), 1450(R)
Organic acids
(See also specific organic acids.)
spectrophotometric analysis of mixtures of, 6: 816
Organic compounds
(Specific organic compounds are indexed according to precedents found in such standard reference works as Chemical Abstracts; Handbook of Chemistry and Physics; Index Medicus; Biological Abstracts; etc.; see also Organic compounds (labeled).)
effects of γ radiation on, measurement of, 6: 145(J)
isotopic analysis of, 6: 104
polarographic behavior of, 6: 808(R)
polymerization of, by electrons, 6: 141(J)
proton stopping by, 6: 718
spectrographic analysis of, fro inorganic constituents, 6: 158
Organic compounds (labeled)
chemical analysis and isotopic assay of, 6: 1628
determination of C^{14} in, by wet combustion, apparatus for, 6: 1408(J)
Organic syntheses
(See also Reaction mechanisms (organic).)
bibliographies on use of organolithium compounds in, 6: 166
Organs
(See also the specific organs.)
blood volume in, measurement of, 6: 765
Orsellinic acid (labeled)
synthesis of, 6: 174(J)
Oscillographs
(Including oscilloscopes.)
danger of exposure to x-rays from, 6: 783(J)
design of, 6: 1511
Oscillators
(See also Pulse generators.)
design of f-m audio, for telemetering systems, 6: 1783
design of, for measurement of radiation, 6: 1(R)
Oxalic acid
(Common salts are indexed in the form Nickel oxalates.)
decarboxylation of, C^{13}–C^{14} isotope effect in, 6: 832
thermodynamic properties of, 6: 560
Oxamide, dithio-
acidity constant, solubility product and solubility of, 6: 1629
Oxamide, dithio- complexes
spectrophotometric analysis, 6: 1653
Oxazolones
ultraviolet spectra of, 6: 850
Oxidation
(See also as subheading under materials oxidized.)
mechanism of catalytic, of CO, 6: 177(J)
radioinduced, 6: 146(J)
Oxygen
determination of, bibliography on, 6: 110
determination of, in Fe by H reduction, 6: 1658(R)
determination of, in Sn, 6: 1137
effects of, on crystal structure of Zr, 6: 229(R)
effects of interstitial, on superconductivity of V, 6: 1739(J)
effects on radiosensitivity
(See Oxygen effect.)
evolution of, by isolated chloroplasts, 6: 534
induction of chromosomal aberrations in pollen by, 6: 4
ionization in, by μ mesons, 6: 1824(J)
neutron and proton charge-exchange reactions in, 6: 1881(J)
neutron total cross sections of, 6: 1023(J), 1525
nuclear momentum distribution in, inferred from proton scattering, 6: 1841
proton range-energy relation in, effect of O_2 pressure on, 6: 1339
proton scattering cross sections of, 6: 1546
solubility of, in K and Na-K alloys, 6: 1237
Oxygen effect
on chromosomal aberrations in pollen, 6: 4
on radiation damage in paramecium, 6: 46
on x-ray-induced aberrations in chromosomes, 6: 26
on x-radiation induction of aberrations in chromosomes, 6: 24
Oxygen isotopes
abundance of, in rocks, 6: 1793
ratio of, in rocks and meteorites, 6: 1744(J)
review of preparation, properties, and chemical applications of, 6: 1124(J)
Oxygen isotopes O^{15}
energy levels of, 6: 1535

Oxygen isotopes O^{18}
alpha reactions (α,p), 6: 1011(J)
deuteron reactions (d,p), 6: 1869(J)
deuteron reactions (d,p and d,α), 6: 1329(J)
fast neutron scattering from, 6: 1895(J)
gamma (γ,n) corss section, 6: 1332(J), 1861
gamma reactions (γ,4α), 6: 699
gamma reactions (γ,n), 6: 963
gamma reactions (γ,n), resonances in, 6: 372(J)
π^0 mesons from, by proton reactions, 6: 670
neutron reactions (n,α), 6: 1018(J)
neutron scattering cross sections, 6: 1859
nuclear stability, 6: 1314(J)
Oxygen isotopes O^{17}
energy levels, 6: 1329(J), 1895(J)
mass, nuclear spin, and relative abundance of, 6: 340(J)
nuclear spin of ground state and excited state, 6: 1869(J)
properties of energy states of, 6: 1859
Oxygen isotopes O^{18}
proton reactions (p,n), excitation functions for, 6: 1021(J)

Paint
preparation of, for high temperature use, 6: 885
Paleotemperatures
mass spectrographic determination of, 6: 1793
Palladium
spectra of, isotope shift in, 6: 693(J)
x-ray spectra of, 6: 97(J)
Palladium isotopes
isomeric transition of, 6: 409
Palladium isotopes Pd^{105}
nuclear spin and magnetic dipole moment of, 6: 693(J)
Palladium isotopes Pd^{111}
neutron capture cross sections, 6: 1628
Palladium–silver couples
porosity of, metallographic studies on, 6: 1474
Palmitic acid
oxidation of, in rat tissues, 6: 792
Paramagnetic salts
relaxation of, size and thermal conductivity effects in, 6: 606(J)
review of properties of, for low temperatures, 6: 921(J)
Paramecium
effects of diethanolamine salt of maleic hydrazide on, 6: 763
effects of nitrogen mustard on cell division in, 6: 1108
effects of radiation on, chemical modification of, 6: 46
effects of x radiation on, chemical modification of, 6: 48
effects of x radiation and nitrogen mustards on, 6: 506(R)
inheritance of reduced vigor in, 6: 140
Parasympathomimetic substances
(See Vagomimetic substances.)
Particle collectors
(See also Electrostatic precipitators.)
impaction efficiency of, 6: 1708
Particle trajectories
mathematical analysis of, in an axial focusing double lens spectrometer, 6: 1795(J)
mathematical analysis of, in cyclotrons, 6: 378
Particles
(See also headings by name of materials, e.g., Nickel powders; see also Aerosols; Dusts; Elementary particles; Nuclear particles; Powders; V particles.)
Dirac, unitary transformation of Hamiltonian, 6: 292
erosive effects of, on bends in circular conduits, 6: 185
relation between extinction coefficient and size of, 6: 919(J)
size measurement of, by x-ray scattering, 6: 782
spacial size measurement of, by "line-area" method, 6: 1463
Pennsylvania State Coll.
progress reports, 6: 806(R)
Pennsylvania State Coll., School of Mineral Industries
progress reports, 6: 116
Pentabarbital sodium
protective action of, against x radiation, 6: 1386(J)
Pentane, dodecafluoro-
molecular dipole moments of, 6: 131(J)
Pentane, 2,2,4-trimethyl-
effect of I in radiolysis of, 6: 1674
Pentoses
determination of, by nitroprusside reactions, 6: 812
ion exchange separation, 6: 148
Peptides
chromatographic determination of, in normal and x-irradiated egg yolks, 6: 508
Peptides (cont'd.)
hydrolysis of, by enzymes, 6: 150
synthesis of modified, from aldonic acid, 6: 162
Periodic systems
(See also isotopes of the elements; also groups of elements, e.g., Transuranic elements.)
based on electronic structure of atoms, 6: 114(J)
Peroxides, perhaloacetyl
preparation of, 6: 1567(P)
storage of, 6: 1566(P)
Pertechnetates
absorption spectra of, 6: 1397(J)
Perturbation theory
(See also subheading perturbation under reactors.)
quantum mechanical, note on, 6: 1695
Phenol–sulfuric acid systems
diffusion in, 6: 804
Phosphatase activity
alkaline, in Be poisoning, 6: 1616
Phosphatases
biosynthesis of, by lily anthers, 6: 3
effects on calcification of bone, 6: 21(J)
Phosphate deposits (uraniferous)
exploration of, in Morocco, 6: 1461(J)
Phosphate rock
processing of, for recovery of P and V, 6: 1727
Phosphatides
biosynthesis of, by rats, 6: 798(J)
incorporation of phosphate into, by liver slices, 6: 799(J)
Phosphinic acid, ethyl-(p-hydroxyphenyl)-
preparation of, 6: 93
Phosphinic acid, ethyl-(p-toluenesulfonyloxyphenyl)-
preparation of, 6: 93
Phosphorescence
(See also as subheading under specific materials; see also Fluorescence; Luminescence; Phosphors.)
induced by α particles or γ-radiation, 6: 653(R)
quantum-mechanical theory of, 6: 1363(J)
Phosphors
(See also specific phosphorescent compounds; see also Luminescence; Phosphorescence.)
application of, to detection of infrared radiation, 6: 1510
effects of α and γ rays on conductivity and fluorescence of, 6: 1392(R)
gamma induced fluorescence and phosphorescence in various inorganic 6: 1749(R)
luminescence of, 6: 1506(R)
properties of, 6: 59(R)
radioinduced electric conductivity of, 6: 1749(R)
scintillation efficiency of, in polystyrene solid solutions, 6: 1509
techniques in using, for x radiation detection, 6: 403(R)
Phosphorus
incorporation of, into lipides of liver slices, 6: 799(J)
plant metabolism of, effect of stunting agents on, 6: 530
ratio of, to C in photosynthesis intermediates, 6: 168
recovery of, from phosphate rock, 6: 1727
spectrographic determination of, in organic solids, 6: 158
tissue distribution of, in Drosophila, 6: 1595
tissue distribution of, in pigs, 6: 796(J)
uptake of, by erythrocytes, 6: 790
uptake of, by ribonucleotides in liver-cell fractions, 6: 112(J)
Phosphorus coatings
on a mirror surface, 6: 1304(R)
Phosphorus–iron–magnesium alloys
corrosion of, effect of composition and heat-treatment on, 6: 228(R)
Phosphorus isotopes
mass defect of, 6: 1553
Phosphorus isotopes P^{31}
gamma reactions (γ,n), 6: 1871(J)
proton reactions (p,α), 6: 1533
Phosphorus isotopes P^{32}
adsorption and assimilation of, by bacterial slimes, 6: 789(R)
beta spectra of, 6: 954(R)
blackening of photographic plates by β particles from, 6: 1287
bremsstrahlung from, angular correlation and intensity of, 6: 1047(J)
concentration of, in hospital wastes, 6: 519(J)
determination of, in plants, 6: 968(J)
isotopic exchange reactions of, with organic P compounds, 6: 802
neutrino emission from, 6: 1909
physiological effects on epidermal cells, 6: 797(J)
preparation of intense sources of, 6: 633(J)
radioautographic uses, 6: 795(J)
removal of, from water supplies, 6: 515

Phosphoryl fluorides
microwave spectra and structure of, 6: 1165
Photofission products
angular distribution of, 6: 1393(R)
Photographic film
(See also Nuclear emulsions.)
in angular distribution measurements, 6: 1292(J)
application of, to beta spectra measurements, 6: 1560(J)
dental, for x-ray dosage measurements, 6: 1613(J)
effects of x rays on, 6: 730(J)
effects of x-rays and light on, 6: 1681(J)
fading of latent images produced by protons and α particles in, 6: 838(J)
neutron and proton charge-exchange reactions in, 6: 1881(J)
in observation and identification of electromagnetic processes occurring in soft component of cosmic radiation, 6: 1765(J)
radiation sensitivity, calibration, and fogging of, 6: 295
response of, to β particles of graded maximum energies, 6: 964(J)
sensitivity of, for x-ray-diffraction studies, 6: 971(J)
Photographic film detectors
(See also Nuclear emulsions.)
with polyvinyl-chloride films, 6: 660(J)
Photometers
polarization, accuracy of, 6: 630(J)
Photomicrography
techniques in observing tissue culture, 6: 797(J)
Photomultiplier tubes
design and operating characteristics of, 6: 936(R)
effects of fatigue in, on scintillation counting results, 6: 665(J)
performance of, 6: 278(R)
spurious pulses from type 5819, 6: 1492
Photoneutrons
effect of γ energy on yield of, 6: 1538
production of nonenergetic, using Be or D, 6: 1829
production of, thresholds for, 6: 706(J)
yields of, from Si and Mg isotopes, 6: 1874(J)
Photons
(See also Gamma radiation; X-radiation.)
in cosmic radiation, absorption of, by various materials, 6: 258(J)
interactions of, with mesons and nucleons, 6: 1055(J)
nuclear reactions (γ,p) and (γ,n), in Al^{27} and Mg^{24}, Mg^{25}, Mg^{26}, 6: 1876(J)
scattering of, by nuclei, 6: 728(J)
Photosynthesis
carbon in, path of, 6: 167
energy transfer methods in, 6: 567
oxidation–reduction potentials in, 6: 540
pH effects on, 6: 531
quantitative studies of, 6: 498
relation of, to respiration, 6: 75(J)
Photosynthetic products
chromatographic analysis of, 6: 167
phosphorus-carbon ratios in, 6: 168
radioautographic analysis of, 6: 167
Phthalic acid, dibutyl ester
atomization of, 6: 1439
Phthalic anhydride
polarographic behavior of, 6: 806
Phthalic anhydride, iodo-
polarographic behavior of, 6: 806
Phycocyanin
occurrence in blue-green algae, 6: 14
Physics
(See also Mathematics.)
Atomic Energy Commission research programs in, 6: 1487
Physostigmine
effects on concentration of K in erythrocytes, 6: 791
Picoline
electron energy levels of, 6: 1769
Pigs
blood volume determinations in, 6: 504(R)
Piles
(See Reactors.)
Pions
(See Mesons (π).)
Pipes
(Generally thick walled, large diameter; see also Tubes.)
clamp for extraction of vertical, from inaccessible locations, 6: 1571(P)
Pitchblende
occurrence of, at Caribou Mine, Boulder County, Colorado, 6: 213
Pitchblende ores
age estimations of, in Belgian Congo, 6: 220(J), 221(J)
diagnostic associates in Morocco, 6: 1460(J)
occurrence of, in Belgian Congo, 6: 222(J)
Pittsburgh Univ.
progress reports, 6: 91(R), 235(R), 1472(R)
Pituitary gland
effects of radiation on hormone production by, 6: 31
neoplasms of, induced by I^{131}, 6: 776(J)
Placental tissues
radiosensitivity effects of mashed, 6: 763
Plankton
(See also Algae.)
radioactivity of, in Columbia River, 6: 513
Plant cells
alpha dosimetry in single, with scintillation counters, 6: 293
Plant metabolism
effects of radiation on oxidative, in bacteria, 6: 1595
Plants
(See also specific plants by name.)
biochemical effects of growth regulators on, 6: 1592
carbon dioxide metabolism by, as studied in barley roots, 6: 1703
chemical analysis of extracts of, by ion exchange, 6: 101
effects of chronic γ radiation on histology of, 6: 1595
phosphorus distribution in, effects of stunting agents on, 6: 530
Plastic deformation
(See also as subheading under specific materials.)
in metals, x-ray microscopic study of, 6: 1250(J)
Plastic film detectors
design of, 6: 1278(R)
preparation of, 6: 960(R)
Plastics
(See also specific compounds used as plastics.)
corrosion of, by H_2O_2, 6: 240(J)
effects of radiation on electronic processes in, 6: 835(J)
effects of radiation on nylon, 6: 493(J)
effects of radiation on paramagnetic resonance spectra of dyed and clear, 6: 834(J)
electron scattering cross sections of nylon, 6: 1037(J)
Plates
heat emission by, in liquids and gases, 6: 1202(J)
Platinum
electric conductivity of, effect of elastic deformation on, 6: 241(J)
tissue distribution of, in rabbits, 6: 63(J)
tissue distribution of, in rats, 6: 496(R)
Platinum isotopes Pt^{191}
formation of, 6: 496(R)
Platinum isotopes Pt^{193}
formation of, 6: 496(R)
Platinum isotopes Pt^{195}
decay schemes of, 6: 1925(J)
Platinum isotopes Pt^{197}
binding energy of, calculation, 6: 333(J)
Platinum isotopes Pt^{197}
decay schemes of, 6: 1925(J)
Plutonium
bone deposition of, 6: 1369
chelation of, 6: 496(R)
identification of, lecture on, 6: 1835
radiometric determination of, 6: 105
separation of, from Am and U, 6: 105
toxicology of, 6: 526(R)
Plutonium isotopes Pu^{239}
alpha emission, measurement of, 6: 1481
conversion electrons from, 6: 1906
fission of, 6: 698
Plutonium isotopes Pu^{240}
conversion electrons from, 6: 1906
Plutonium isotopes Pu^{241}
beta spectra of, 6: 1906
Pocket chambers
design of electrometers for, 6: 1581(P)
response of, to fast neutrons, 6: 1(R)
Polarographic analysis
(See also as subheading under specific materials.)
equipment for, 6: 552(R)
micro H-cell for, design, 6: 1151(J)
theory of, 6: 1635
Polarographs
design of high-sensitivity recording, 6: 1163
Polarography
application of, to study of metal corrosion, 6: 1450(R)
Pollen
oxygen-induced chromosomal aberrations in, 6: 4
x- and γ-ray induced chromosomal in aberrations, 6: 27

Polonium
toxicology of, 6: 526(R)
x-ray spectra of, bibliography on, 6: 449
Polonium isotopes Po^{210}
alpha emission, 6: 296(R)
alpha particles from, pulse-height distribution of, 6: 296(R)
decay schemes of, 6: 1628
electron spectra of, 6: 954(R)
Polonium isotopes Po^{211}
formation, half lives, energy levels, and alpha emission of, 6: 411
genetic effects of α-radiation from, on fungi, 6: 1085
Polonium isotopes Po^{212}
alpha emission from, 6: 438(J)
nuclear energy levels of, 6: 1848(J)
Polyenes, diphenyl-
scintillations in, 6: 961
Porcelain
(See also as products, e.g., Pipes.)
thermal conductivity of, up to 1300°C, 6: 1448(R)
thermal rupture of porous and non-porous, 6: 199
Porous metals
machining of, 6: 1234
permeability of, 6: 1196, 1232(R)
sweat cooling of, 6: 1196, 1197
sweat cooling in, protection achieved by, 6: 864
Porphyrins
degradation of, method for, 6: 510(R)
Positronium
annihilation and energy levels of, 6: 681(J)
fine structure of, 6: 447, 1861
formation of, in Freon 12, 6: 1771
formation of triplet, in gases, 6: 1305
production, quenching, and Zeeman effect in ortho-, 6: 1533
Positrons
(See also Electrons.)
absorption of, by Pb, 6: 395(J)
annihilation half lives of, 6: 1839
from $C^{13}(p,\gamma)N^{13}$ (β^+), 6: 1879(J)
half lives of, in condensed materials, 6: 1910
mass measurements of, 6: 995(J)
scattering of, in A, 6: 401(J), 1899(J)
scattering of, in nuclear emulsions, 6: 661(J)
short-range interaction of negatrons with, 6: 1861
three-photon annihilation of, 6: 1305, 1771
Potassium
chromatographic separation of, from Rb and Cs, 6: 848(J)
concentration of, in erythrocytes, 6: 791
determination of, in Na metal, 6: 815
effects on carbohydrate metabolism, 6: 758
exchange of, from blood plasma with K of body tissues in rats, 6: 1110
exchange rate of, in circulating blood of rabbit, 6: 1111
exchange rate of, in rat erythrocytes, 6: 793
heat of reaction of, with water at 25°, 6: 1132(J)
infrared spectra of, calculations, 6: 161(J)
metabolism of, in x-irradiated dogs, 6: 510(R)
radiometric determination of, in urine, 6: 1116
solubility of oxygen in, 6: 1237
spectrographic determination of, in organic solids, 6: 158
Potassium (liquid),
thermal conductivity of, measurement of, 6: 1444(J)
Potassium borates
coloration of, 6: 142(J)
Potassium bromide crystals
absorption bands in irradiated, 6: 1427
Potassium chlorides
coloration and luminescence of, radiation-induced, 6: 142(J)
thermodynamic properties of, 6: 560
Potassium fluophosphates
infrared spectrum and crystal structure of, 6: 1667(J)
Potassium fluorides
infrared spectrum of, 6: 1665(J)
Potassium iodides
scintillation and luminescence of pure and Tl-activated, 6: 302(J)
Potassium isotopes
spectra of, 6: 1750(R)
Potassium isotopes K^{37}
beta spectra and half lives of, 6: 735
Potassium isotopes K^{38}
gamma spectra, 6: 1351(J)
Potassium isotopes K^{39}
mass of, 6: 991(J), 1284(J)
Potassium isotopes K^{40}
radioactive decay of, 6: 369(J)
Potassium isotopes K^{41}
mass of, 6: 991(J), 1284(J)
Potassium isotopes K^{42}
decay of, $\beta-\gamma$ angular correlations in, 6: 1843(J)
formation of, by proton bombardment of Cu, 6: 700
Potassium oxides
solubility of, in K, 6: 1237
Potassium–sodium alloys
heats of formation of, at 25°, 6: 1127(J)
solubility of oxygen in, 6: 1237
Potassium–sodium alloys (liquid)
thermal conductivity of, at 200 to 815°C, 6: 232
Potentiometers
multiple-range, for use with thermocouples, 6: 1496
Powders
(See also by materials, e.g., Nickel powders; see also Particles.)
surface-area measurement of, 6: 1426
Power
(See Electric power, Nuclear power, and Power reactors.)
Power reactors
(See also Nuclear power.)
cycle analysis for, 6: 577
Power supplies
(See also specific instruments and various components, e.g., electron tubes; see also Electric power; Rectifiers; Voltage regulators.)
circuit for d-c high-voltage, f-m-regulated, 6: 1585(P)
design of, 6: 59(R), 407(R), 1304(R)
operating and technical manual on E.H.T. Unit – AEP 1007A (Canada), 6: 1494
performance curves for, 6: 628
Praseodymium
absorption spectra of, theory, 6: 1271(J)
fractional-precipitation separation of, from La, 6: 1174(J)
Praseodymium chlorides
absorption spectra of, 6: 1628
activity coefficients, conductances, and transference numbers of, 6: 562
activity coefficients of, in aqueous solutions, 6: 558
transference numbers of, 6: 563
Praseodymium compounds
absorption spectra of, 6: 1272(J)
purification of, by ion exchange, 6: 559
Praseodymium isotopes Pr^{142}
beta spectra and half lives of, 6: 735
Praseodymium isotopes Pr^{143}
preparation of carrier-free, 6: 1422
Praseodymium isotopes Pr^{144}
internal conversion in, 6: 1919(J)
Praseodymium oxide–cerium oxide systems
reduction of, by H_2, 6: 1683(J)
Praseodymium oxides
heat content, specific heat, and entropy of, 6: 147(J)
Praseodymium peroxides
preparation and identification of, 6: 1684(J)
Pressure drop
(See also Air flow.)
measurement of, in glass spheres, 6: 1441(R)
Pressure gages
(See also Manometers; Vacuum gages.)
design of oscillation type, 6: 484(P)
Princeton Univ.
progress reports, 6: 90(R)
Promethium
bone deposition of, 6: 1389
Promethium isotopes
decay schemes of, 6: 1907, 1927
Promethium isotopes Pm^{141}
identification of, 6: 1927
Promethium isotopes Pm^{143}
limits on half lives of, 6: 1927
Promethium isotopes Pm^{145}
decay schemes of, 6: 1927
Promethium isotopes Pm^{146}
decay schemes of, 6: 1927
Promethium isotopes Pm^{148}
identification of, 6: 1927
Promethium isotopes Pm^{149}
half lives of, 6: 1927
Promethium isotopes Pm^{150}
identification of, 6: 1927

Promethium isotopes Pm^{151}
half lives, 6: 1424(R)
Propane (labeled)
preparation of, 6: 551
2-Propanol
mass spectra of, 6: 1628
2-Propanol (labeled)
mass spectra of, 6: 1628
preparation of, 6: 551
1-Propanol,2,3-dimercapto-
radiosensitivity effects of, 6: 46
2-Propanone, 1,3-dihydroxy-(labeled)
synthesis of, 6: 571(J)
Propionates
metabolism of, by Propionibacterium pentosaceum, 6: 1697
Propionic acid
ionization of, in dioxane-water solutions, 6: 1631
oxidative reactions in fermentation of, 6: 1070(J)
Propionic acid, α-bromo-
polarographic behavior of, 6: 538
Propionic acid, formyl-
reduction of, by Wolff-Kishner method, 6: 178(J)
Proportional detectors
for alpha detection in large samples, 6: 959
application of, to determination of decay scheme of I^{131}, 6: 1922(J)
design and performance of, 6: 645
design, performance, and operation of BF_3 filled, 6: 1812(J)
effect of negative ions on, 6: 1533
efficiency of, 6: 409
energy loss of electrons in, 6: 393(J)
in measuring intensities of diffracted x rays, 6: 1291(J)
performance of 4π, in β counting, 6: 277(R)
for soft β and x radiation, 6: 309(J)
for thermal neutron surveying, 6: 1288
Propyldisulfide, perfluoro-
preparation, physical properties, and infrared spectra of, 6: 129(J)
Propyltrisulfide, perfluoro-
preparation, physical properties, and infrared spectra of, 6: 129(J)
Propyne, 3,3,3-trifluoro-
molecular structure of, 6: 554(J)
synthesis and infrared spectra of, 6: 553(J)
Protactinium isotopes
rapid separation methods for, from cyclotron bombarded $Th(NO_3)_4$, 6: 1685
Protactinium isotopes Pa^{231}
nuclear properties of, 6: 1928
Protactinium isotopes Pa^{234}
half lives and ion exchange separation of, 6: 437(J)
Proteins
chromatographic analysis for, in Drosophila, 6: 767(J)
Proton cross sections
(See also the subheadings proton cross sections and proton reactions under specific materials.)
theory of, 6: 686
Proton scattering cross sections
of bromine, C, N, O, and Ag, 6: 1546
measurement of, by magnetic deflection method, 6: 1029
theory of, 6: 1551(J)
Proton spectra
measurement and calculation of, 6: 388
Protons
(See also Cosmic protons.)
angular distribution of, in the photodisintegration of deuterons, 6: 1539(J)
from C(γ,p) reactions, 6: 701
cross sections for electron capture and loss by, passing through air, 6: 1905(J)
from D(n,p), angular distribution of, 6: 361
electromagnetic interference effects in charged π−p scattering, 6: 1514
from fission of U^{235}, energy distribution of, 6: 698
from H^2(d,p), angular distribution of, 6: 1330(J)
impulse approximation for scattering of, by deuterons, 6: 1896(J)
interactions of, with neutrons, 6: 386, 1346(J)
interactions of, with protons, 6: 385
interactions of photons with, in H_2 high-pressure chamber, 6: 1393(R)
ionization ranges of, in H_2 and O_2 gas, 6: 1339
from Li^6(d,p), angular distribution of, 6: 710(J)
long-range interactions of, with protons, 6: 336
mass changes of, in p-p scattering, 6: 1893(J)
mass of, from T(p,n)He^3, 6: 1859
multiple coulomb scattering of, in nuclear emulsions, 6: 1550(J)
Protons (cont'd.)
nuclear reactions of, bremstrahlung from, 6: 337
polarization and scattering of, by He, 6: 1887
polarization of, by double scattering, 6: 1900(J)
proton reactions (p,dπ+), theory, 6: 328(J)
range-energy relation in air and Al, 6: 1345(J)
range-energy relation in nuclear emulsions, 6: 391(J), 399(J)
range of 18-Mev, in Al, 6: 1901(J)
range straggling of, 6: 1897(J)
response of scintillation crystals to, 6: 966(J)
scattering of, by He, 6: 1040(J)
scattering of, by meson fields, theory, 6: 1042(J)
scattering of, in nuclear emulsions, 6: 391(J)
scattering of, by nuclei, 6: 389
scattering of, by protons, 6: 385
scattering of, by protons or neutrons, 6: 1894(J)
scattering of, theory, 6: 724(J)
scattering of neutrons by, 6: 387
scattering of neutrons by, theory, 6: 1043(J)
star production by, in nuclear emulsions, 6: 1534
anomalous magnetic moment of, theory, 6: 1054(J)
from 270-Mev neutron-deuteron collisions, 6: 716
yields of, from γ radiation on Si and Mg isotopes, 6: 1874(J)
Protons (negative)
probability of formation of, from V^0 particles, 6: 1488
Puerto Rico Univ.
progress reports, 6: 610(R)
Pulse analyzers
(See also Oscillographs.)
calibration of, 6: 407(R)
calibrator unit for, 6: 629
design of, 6: 632(J), 634(J) 962(R)
deisgn of coincidence, 6: 1499
review of types employed in nuclear research and their performance, 6: 1797
testing of, 6: 936(R)
Pulse generators
design of, 6: 277(R), 483(P)
for discriminator calibration, 6: 629
for music range, 6: 943(J)
photographs and drawings of, 6: 941
Pulse modifiers
design of, 6: 486(P)
photographs and drawings of, 6: 941
Pumice
as an aggregate for light weight structural concrete, 6: 1206
Purines
metabolism of, in the presence and absence of folic acid, 6: 1112
Pyridine
electron energy levels of, 6: 1769
Pyridine, 4-carboxymethyl-2-phenyl-
synthesis of, 6: 91(R)
Pyridoxine
protective action of, against toxic effects of P^{32}, 6: 1081
Pyrite
absorption of xanthate on, 6: 251(R)
flotation of, tracer studies of, 6: 251(R)
Pyrometers
(See also Thermocouples.)
window shield for, for use in vacuum melting operations, 6: 1445
Pyruvates
biosynthesis of, by fungus, 6: 532(J)
oxidation of, in mitochondria, 6: 760
metabolism of, in rat liver
Pyruvic acid
polarographic behavior of, 6: 1635
reduction of, by Wolff-Kishner method, 6: 178(J)
Pyruvic acid (labeled)
synthesis of, 6: 1179(J)
Pyruvonitrile
hydrolysis of, in aqueous concentrated HCl and in an ethereal medium, 6: 1179(J)

Quantum electrodynamics
charge renormalization accompanying radiative corrections in, 6: 1362(J)
conservation laws in, 6: 1932(J)
covariant auxiliary condition for, 6: 1056(J)
electromagnetic effects due to spin-orbit coupling, 6: 1838
energy density tensor in gauge-independent, 6: 1057(J)
formulation of, 6: 453(J)

Quantum electrodynamics (cont'd.)
gauge-independent, 6: 744(J)
interaction of spinning particle with field, 6: 1933(J)
many-electron problem in solids, 6: 754(J)
meson theories, 6: 746(J)
multiple boson processes, 6: 745(J)
normalization group in, 6: 458(J)
quantization of Dirac's new classical theory, 6: 1939(J), 1940(J)
radiation corrections in, 6: 455(J)
radiation from an electron in a magnetic field, 6: 918, 933(J)
radiation reaction in relativistic motion of a particle in a wave field, 6: 1935(J)
relativistic equation for bound-state problems, 6: 1937(J)
reversibility of, 6: 1058(J)
theory of electrons, 6: 621(J)
theory of Lamb shift and anomalous magnetic moments, 6: 1054(J)
threshold for particle creation in, 6: 1942(J)
unitary transformation of Hamiltonian for free Dirac particle, 6: 292
Quantum mechanics
(See also Mathematics.)
books on, 6: 749
boundary conditions and time-dependent states, 6: 682(J)
equations of motion and conservation theorems, derivations of, 6: 637(J)
in Fock space, 6: 683(J)
forced harmonic oscillation in, 6: 1370(J)
of hydrogen atom, 6: 1060(J)
invariant forms of 4 Dirac wave functions, 6: 1062(J)
perturbation theory in, 6: 1502(J)
of phosphorescence, 6: 1363(J)
relation of, to classical mechanics, 6: 1938(J)
relation of, to deterministic theories, 6: 1367(J)
relativistic theory of spin, 6: 457(J)
scattering of quanta by electrons, 6: 1034(J)
solutions for Schroedinger equation of 2-electron atoms, 6: 1063(J)
in study of electronic energy of lithium hydride, 6: 1303(J)
theory of particles of arbitrary spin, 6: 1059(J)
wave functions in momentum space, 6: 1936(J)
Quartz
(See also Silicon oxides.)
absorptive properties, 6: 251(R)
Quenching circuits
design of, for parallel-plate counters, 6: 942(J)
Quinhydrones
polarographic behavior of, 6: 1638
Quinoline, 4-methyl, 2-phenyl-
synthesis of, 6: 91(R)
Quinoline oxalate
formation of radioactive naphthalene and other compounds from, by Szilard-Chalmers reactions, 6: 1167(J)
8-Quinolinol chelates
chemical stability of, 6: 1632
8-Quinolinol, 2-methyl-
complexes of, with Co, Cu, Mg, Mo, Ni, Tl, V, and Zn, 6: 1141(J)

Radiation
(For specific radiation see also direct headings; e.g., Alpha particles; Beta particles, etc.; see also Accelerators; Nuclear reactions; Radiation detection instruments.)
angular correlation functions of, asymptotic behavior of, 6: 350(J)
angular distribution, use of photographic densitometry for measurement of, 6: 1292(J)
biological effects of, 6: 53(J), 1095
biological effects of, permissible limits for, psychological factors induced by fear of, 6: 1376
chain mechanism of damage by, 6: 768(J)
color-center production in borosilicate glass by, 6: 1419(J)
cytological effects on invertebrates, 6: 1381(J)
detection and measurement, 6: 1(R)
dosage determinations of, from metabolized isotopes, 6: 501(R)
dosage determinations of, in treatment of skin diseases, 6: 64(J)
dosage determinations of, in a water phantom, 6: 680(R)
effects on eyes of rabbits, 6: 505
effects on lipoprotein metabolism, 6: 38
effects on mortality rate of rabbits fed tapioca dextrin, 6: 1617
effects on small intestine, 6: 35
effects on sulfhydryl content of blood palsma, 6: 1593
from Ga^{72}, physiological effects of, 6: 527
genetic effects in bacteria, 6: 1086
genetic effects on maize seed, 6: 774(J)
genetic effects on paramecia, 6: 140
Radiation (cont'd.)
health physics aspects of, 6: 781
hematological effects of, 6: 1598
histological effects on plants and rats, 6: 1595
indirect effects on blood vessels, 6: 1600
interaction with matter in the region of optical resonance, 6: 1361(J)
lethal effects of, influence of blood dialysis on, 6: 1378
lethal effects on cells, 6: 771(J)
multiple scattering of, theory, 6: 383
permissible limits of, lecture on, 6: 1095
physiological effects on rats, 6: 1595
quantum theory of scattering of, 6: 1039(J)
scattering of, in a central field, 6: 727(J)
scattering of, by electrons, 6: 1034(J)
scattering of, in a magnetic field, 6: 1041(J)
scattering of, by metal foils, 6: 398(J)
scattering phases of, upper and lower bounds of, 6: 719(J)
Radiation chemistry
(Covering chemical reactions and changes in chemical properties brought about by radiations; see also the property concerned and reactions under the element or material affected by the radiation; see also Radiochemistry.)
bibliographies on utilization of fission products, 6: 916(R)
review of development, application, possible uses of, 6: 833(J)
Radiation detection instruments
(A complete instrument, not necessarily including the radiation detector component; classified in the subheadings below according to the type of signal received from the detector component; see also Counting devices; Radiation detectors; Radiological telemetering systems.)
calibration checking device for, 6: 662(J)
colorimetric, for γ radiation, 6: 660(J)
conference on, 6: 631(J)
for counting CO_2, 6: 663(J)
for counting random pulses, 6: 303(J)
ion current type, 6: 638(R), 650(R), 1506(R), 1802(R)
monitor and x-ray yield integrator for betatron, 6: 1799
portable, for β and γ radiation, 6: 313(J)
pulse type, 6: 303(J)
pulse type, calibration of, 6: 667(J)
pulse type, discharge mechanism in, 6: 658(J)
pulse type, for liquid samples, 6: 659(J)
review of, 6: 305(J)
self quenching in, 6: 970(J)
Radiation detectors
(For specific radiation detectors, sometimes called counters, see also the main headings listed below; see also Radiation detection instruments; Cloud chambers; Crystal detectors; Geiger-Mueller tubes; Ionization chambers; Photographic film detectors; Photomultiplier tubes; Pocket chambers; Proportional detectors; Scintillation detectors.)
alpha-particle bench monitor, design, 6: 1805(J)
for health physics, lecture on, 6: 781
statistical analysis of, 6: 640(R)
Radiation injuries
(See also as subheading under organisms, organs, etc.; see also Radiation sickness.)
accidentally produced during therapy, 6: 42(J)
caused by atomic bombs, review of types and treatments of, 6: 52(J)
chemical prophylaxis of, 6: 23, 46, 47, 48, 49, 50, 51(J), 53(J), 520(R)
chemical prophylaxis of, with cysteine, 6: 1379(R), 1606
effects of adrenalectomy on, 6: 507
prophylaxis of, with injected bone marrow, 6: 57(J)
prophylaxis of, review of biological and pharmacological agents for, 6: 1380
produced by synergistic action of radioisotopes, 6: 33
therapeutic effects of injected lymphocytes in, 6: 1612
therapy of, blood dialysis in, 6: 1378
Radiation Lab., Univ. of Calif.
progress reports, 6: 962(R), 1821(R)
progress reports, medical and health physics, 6: 495(R)
Radiation protection
(General aspects of the problem concerning personnel; see also Health physics; Radiation detection instruments.)
of x-ray technicians in hospitals, 6: 1096(J)
Radiation sickness
(See also the subheading biological effects under Radiation and under the specific radiations; see also physiological headings, e.g., Anemia, Blood picture, Skin, etc.; see also Radiation injuries.)
symptoms, pathology and treatment of, 6: 1097
symptoms and treatment of, caused by atomic bomb explosions, 6: 1588(J)

Radiation sickness (cont'd.)
therapy of, with ACTH, 6: 58(J)
therapy of, with antibiotics, 6: 784
therapy of, with aureomycin and whole blood, 6: 516(R)
therapy of, with Vitamin B_{12}, 6: 55(J)
Radiation sources
geometry of, 6: 650(R)
Radiation target cans
design and welding of, 6: 423(J)
Radiation target theory (biology)
as applied to the inactivation of catalases by fast deuterons, 6: 1602(J)
Radiation targets
assembly for irradiation of solutions, 6: 496(R)
preparation of, for producing radioisotopes, 6: 1584(P)
Radiation targets (Li)
preparation and storage of, 6: 536
Radioactive contamination
(See also subheading contamination under materials and units contaminated; see also Stack disposal; Waste disposal.)
control of, lecture on, 6: 781
of metal surfaces by I^{131} in solution, 6: 883
Radioactive minerals
aerial prospecting for, 6: 590(J)
crystal structure destruction of, radioinduced, 6: 1225(J)
Radioactive ores
(See also specific radioactive ores by name, e.g., Uranium ores.)
prospecting for, in the Soviet Union, 6: 216(J)
Radioactive waters
therapeutic uses of, 6: 524(J)
Radioactivity
(See also as subheading under specific isotopes and elements; also the subheading radioactivity induced in; see also subheading for specific radiations emitted, e.g., gamma emission; see also main headings for radiations and particles, e.g., Alpha particles, and Gamma radiation.)
maximum permissible limits of, in air, 6: 1611
nomograms for calculating, of fission products, 6: 406
in snow on Puy de Dome, France, 6: 1358(J)
Radioapplicators
comparison of, for β particles, 6: 304(J)
design of, 6: 525(J)
design and performance of, 6: 504(R)
preparation of radioactive glass beads as, 6: 625(R)
thin-walled glass needles as, 6: 633(J)
Radioautographic analysis
(See also as subheading under specific materials.)
of thorium- and U-containing materials, 6: 1809(J)
Radioautography
(Photographic processes involving the use of radiations from emitters incorporated with a material; e.g., tissue containing C^{14}, etc.; see also Radioautographic analysis; Radiography.), 6: 61(J)
gamma-ray pinhole camera for use in, 6: 521
measurement of nucleic acids by, 6: 149
with phosphorus P^{32} and S^{35} in plants, 6: 795(J)
techniques using At and I simultaneously, 6: 496(R)
tritium in, 6: 61(J)
Radiochemical processing plants
instrument needs of, 6: 1705
Radiochemistry
(Covering general theory and experimental techniques of the chemistry of radioactive materials.)
history of, with emphasis on Otto Hahn's discoveries, 6: 1675(J)
Radiography
(Photographic processes involving the use of x and gamma radiations from external sources; see also Radioautography; Radiographic analysis.)
depth determinations by x-ray photography, 6: 522(J)
electron, theory and applications of, 6: 1778
elimination of alignment errors in, 6: 62
materials and methods for, 6: 477(P)
Radioisotopes
determination of tracers in presence of their daughters, 6: 1432
measurement and handling of, for therapeutic uses, 6: 525(J)
measurement of nuclear properties of, by microwave spectroscopy, 6: 1928
metabolism and excretion of, 6: 501(R)
physical, chemical and industrial applications of, 6: 305(J)
production of, review of methods, 6: 1853
production of, in Zoe reactor, 6: 1325(J)
review of applications of, in biochemical studies, 6: 73
spectrographic analysis of, 6: 443
Radioisotopes (cont'd.)
synergistic lethal action of, in mice, 6: 33
target arrangement for production of, 6: 1584(P)
tracer techniques using, applied to tissue culture, 6: 797(J)
Radiological defense
medical aspects of, 6: 1587(J), 1588(J)
Radiological telemetering systems
design of f-m audio oscillators for, 6: 1783
Radiological warfare
effects on government and legal systems, 6: 1065(J)
medical aspects of, lecture on, 6: 1376
military aspects of, 6: 1587(J)
Radiology
history of standardization in, 6: 1098(J)
Radiometric analysis
(See also as subheading under specific materials.)
sample preparation for, 6: 512(J), 965(J), 968(J)
Radiosensitivity
effects of temperature on, 6: 44(J)
Radiotherapy
(See also as subheading under conditions treated; see also subheadings biological effects under specific radiations, and therapeutic uses under specific radioactive isotopes.)
using Co^{60} source, 6: 1102(J)
comparison of β-ray applicators, 6: 304(J)
Radium
alpha spectra of, 6: 428(J)
decay schemes of, 6: 444(R)
effects of injected, on alkaline phosphatase activity, 6: 28
effects on excretion and white blood count, 6: 775(J)
occurrence of, in municipal water supplies, 6: 510(R)
tissue distribution, pathological effects, and therapeutic uses of, 6: 63(J)
toxicology of, 6: 526(R), 787
Radium isotopes Ra^{230}
formation and decay schemes of, 6: 284
Radon
biological effects of, as compared to x radiation, 6: 763
dosage determinations of, and tissue distribution of decay products from, 6: 1607(J)
gamma spectra of, 6: 446(R)
measurement of, in breath, 6: 1802(R)
Radon isotopes Rn^{220}
binding energy of, calculation, 6: 333(J)
Radon isotopes Rn^{222}
half lives of, measured by differential ionization method, 6: 1357(J)
Rare earth chlorides
activity coefficients of, in aqueous solutions, 6: 558
transference numbers of, 6: 563
Rare earth isotopes
alpha emission from, 6: 1556
Rare earth oxychlorides
thermodynamic properties and crystal energy of, 6: 1753
Rare earth vanadates
crystal structure of, 6: 1409(J)
Rare earths
alpha emission from, 6: 412
determination of, by pile activation, 6: 549(J)
fractional-precipitation separation of, 6: 1174(J)
ion exchange separation of, theory, 6: 561, 1690(J)
preparation of, by calcium reduction of chlorides, 6: 1171
preparation and purification of, 6: 1464
separation of, 6: 842(J)
Rare gases
(See also the specific elements in the group.)
ion drift velocities in, 6: 931(J)
molecular ion formation in, 6: 931(J)
molecular ions in, mass spectrographic studies of, 6: 947(J)
Rate meters
(Integration of the pulses takes place in the circuit; for instruments integrating the pulses in the detector component see Radiation detection instruments — ion current type.)
design of, 6: 1(R), 1802(R)
Rats
quarters for, criteria for air conditioning, 6: 1373
urinary excretion of, effect of saline and pituitary hormone on, 6: 1622(J), 1623(J)
RCA Victor Div., Radio Corp. of America
progress reports on ionization chambers, 6: 638(R), 648(R), 649(R), 650(R), 651(R), 652(R)

RCA Labs. Div., Radio Corp. of America
progress reports, 6: 935(R)
Reaction kinetics
spectrophotometric determination of rate constants, 6: 79
temperature variation of equilibrium constants, nomographs, 6: 254
Reaction mechanisms (organic)
(Including kinetics, rate studies, rearrangements, etc.; see also Hydrogenation; Oxidation; Organic syntheses, etc.; and specific compounds.)
ascorbic acid oxidation in presence of thyroxine and derivatives, 6: 80
Reactor experimental facilities
high-temperature furnace for use in nuclear reactors, design, 6: 1316
Reactor materials
(See subheadings design; materials; shielding; etc., under specific reactors; also specific materials of use in reactors, e.g., Graphite; Beryllium; etc.; and the general headings Reactor moderators, etc.)
factors in selection of, lecture on, 6: 1189
properties required of, review, 6: 1315
radioactivity induced in, by a neutron flux, 6: 1908
Reactor moderators
(See also subheading moderators under specific reactors; see also Graphite moderated reactors; Heavy water reactors; Reactor materials.)
properties of materials for, review, 6: 1315
Reactor safety
(See also subheading safety under specific reactors; see also Criticality studies; Reactors—criticality studies.)
hazards and safety characteristics of reactors, 6: 1322
Reactor shielding
(See also the subheading shielding under specific reactors.)
design of, lecture on, 6: 1360
elastomeric materials for, 6: 443
Reactor simulators
(See also characteristic or component simulated under specific reactors and Reactors; see also Computers.)
design of, to assist in design of control system for NRU reactor, 6: 1802(R)
Reactor tubes
(See also tubes as subheading under specific reactors.)
size of, for a specified heat transfer and flow friction performance, 6: 1709
Reactors
(See also specific reactors.)
AEC program for, lecture on, 6: 1318
chemical and engineering problems in the development of, lecture on, 6: 1320
construction of first, at Univ. of Chicago, 6: 353
criticality studies for, 6: 354
group theory, 6: 952, 1000, 1319
hazards of low power research, lecture on, 6: 1322
heat transfer in, lecture on, 6: 1201
instrumentation and control for, lecture on, 6: 1321
multi-group calculations for, test of, 6: 695
multi-group equations for, numerical integration of, 6: 694
neutron flux distribution, influence of cylindrical channel on, 6: 332
neutron flux measurements in, ionization chambers for, 6: 666(J)
reactivity of, measurement, 6: 1527
survey of types, 6: 1323
theory, lecture on, 6: 1319
Recoil ions
energy loss of, in tissue, 6: 34
Rectifiers
(Crystal, copper oxide, mechanical; see also Electron tubes; Power supplies.)
design of, 6: 488(P)
Red Desert Region
airborne radioactivity survey of, 6: 589
Refractory materials
(See also specific materials; see also Ceramic materials.)
corrosion of, by liquid Bi, 6: 900
for high-temperature use in aircraft, 6: 300
spectrographic analysis of, carbon effect in, 6: 160(J)
thermal conductivity of, at high temperatures, 6: 578
Reproduction
effects of radiation on, in rabbits, 6: 504(R)
Reptiles
effects of x radiation on hemopoietic system, life span, and reproductive system of, 6: 1090(J)
Research Lab. of Electronics, Mass. Inst. of Tech.
progress reports, 6: 1750(R)
Resins
(See also Plastics.)
evaluation of, for decontamination of H_2O, 6: 830(R)
Resistance furnaces
design of, 6: 236(R)
for study of in-pile gas-solid reactions, 6: 135
Resistance thermometers
design and performance of, 6: 1780
Resonators
electromagnetic, design and use for testing dielectric properties of titania ceramic, 6: 1493
Respiration
effects of x radiation on, in bacteria, 6: 1079
Reticulo-endothelial system
effects of radiation on, 6: 33
Rhenium
neutron resonance cross sections of, 6: 1304(R)
Rhodium
deuteron range-energy relation in, 6: 1032(J)
tissue distribution of, in rats, 6: 496(R)
x-ray spectra, 6: 97(J)
Rhodium isotopes
yield of, from U fission, 6: 1424(R)
Rhodium isotopes Rh^{104}
gamma spectra of, 6: 1923(J)
isomeric transition of, 6: 409
Rhodium isotopes Rh^{106}
gamma emission from, polarization and angular correlation of, 6: 430(J)
Ribonucleic acid, desoxy-
separation of, from pneumococcus type VI, 6: 762
Ribonucleic acids
enzymatic degradation products of, 6: 1172
separation of, from pneumococcus type VI, 6: 762
Robineau Claims (Colorado)
torbernite occurrence at, 6: 214
Rockets
propulsion of, application of nuclear power to, 6: 1066
Rocks
radioactive decay rate and age estimations of, 6: 425(J)
ratio of O isotopes in, 6: 1744(J)
Roots
growth of, effects of radiation on, 6: 39(J)
radiosensitivity of, effects of temperature on, 6: 44(J)
Rubber
(Specific elastomers, e.g., hevea, are indexed as organic compounds; see also Plastics.)
corrosion of, by H_2O_2, 6: 240(J)
thermo-osmosis of gases through, 6: 1776(J)
Rubidium
chromatographic separation of, from K and Cs, 6: 848(J)
natural radioactivity of, 6: 1559(J)
x-ray spectra, 6: 97(J)
Rubidium borates
coloration of, 6: 142(J)
Rubidium isotopes Rb^{86}
decay of, β-γ angular correlations in, 6: 1843(J)
nuclear properties of, 6: 1928
nuclear spin of, 6: 1909
Rubidium isotopes Rb^{87}
gamma (γ,α) cross sections, 6: 1012(J)
gamma reactions (γ,α), 6: 1871(J)
half lives of, 6: 1355(J)
Rubidium isotopes Rb^{88}
beta emission and decay scheme of, 6: 1926(J)
Ruthenium
oxidation-reduction states, 6: 1653
x-ray spectra, 6: 97(J)
Ruthenium complexes
spectrophotometric analysis of, 6: 539, 1653
with thiourea, formation and properties of, 6: 1119
Ruthenium isotopes Ru^{105}
preparation of carrier-free, 6: 1422
Rutile
thermal capacity of CH_4 adsorbed on, 6: 868
Rutin
adrenal-stimulating effect of, 6: 15(J)

Safety
(General handbooks, rules, and regulations.)
handbooks of, used at AERE, 6: 514

Saint Louis Univ.
progress reports, 6: 954(R)
Samarium chlorides
activity coefficients of, in aqueous solutions, 6: 558
transference numbers of, 6: 563
Samarium isotopes
decay schemes of, 6: 1907
Samarium isotopes Sm^{151}
beta spectra and photon emission of, 6: 1906
Sarcomas
(See also specific sarcomas, organs, tissues, animals, etc.; see also Carcinomas.)
regression of, synergistic effects of simultaneous systemic and local x radiation on, 6: 1082
Scalers
counting losses in, calculation of, 6: 314(J)
design of four-tube decade, 6: 1815(J)
design and operation of type 1070A (British), 6: 1505
design of, using cold-cathode thyratrons, 6: 1779
Scandium
chemical determination of small concentrations of, 6: 824(J)
Scandium isotopes
decay schemes of, 6: 1907
Scandium isotopes Sc^{45}
mass of, 6: 991(J)
nuclear magnetic moments of, 6: 1849(J)
Scandium isotopes Sc^{46}
gamma-gamma angular correlation in, 6: 1913(J)
isomeric transition in, 6: 1046
Scintillation detectors
(See also Crystal detectors.)
for air monitoring, 6: 1278(R)
for alpha dosimetry in single biological cells, 6: 293
decay time, pulse heights, and fluorescence spectra of organic, 6: 1424(R)
design of, 6: 59(R), 640(R, 1506(R)
effective resolution of, method for increasing, 6: 1801
effects of α and γ rays on conductivity and fluorescence of, 6: 1392(R)
effects of fatigue in photomultipliers on results of, 6: 665(J)
for fast neutrons, 6: 641
for liquid or solid samples, 6: 521
liquid, detection of thermal neutrons by B dissolved in, 6: 1286
liquid, homogeneous counting of biological material with, 6: 294
liquid, mode of action and efficiency of, 6: 294
lithium iodide crystals as, 6: 1507
for measuring activity of biological samples, 6: 1813(J)
monitor and x-ray yield integrator for betatron, 6: 1799
operation of, 6: 446(R)
organic crystal, fluorescence of, 6: 306(J)
performance of, 6: 961, 1802(R)
pulse-equalizing circuit for use with, 6: 1798
response of, to charged particles, 6: 966(J)
techniques for electron and γ-ray spectroscopy with, 6: 307(J)
testing of, 6: 646
thallium-activated CaI_2 and CsI as, 6: 1806(J)
Sclerosis
(See also Atherosclerosis; Multiple sclerosis.)
glomerulo, in diabetic patients, 6: 1074
Seals and glands
(See also Vacuum seals.)
design and testing of gas seals for KAPL intermediate power breeder control rods, 6: 1707
Seed
(See also specific plants.)
effects of radiation on, 6: 32
effects of x radiation and neutrons on, 6: 41(J)
Selenium isotopes
decay schemes of, 6: 1907
Selenium isotopes Se^{73}
decay schemes of, 6: 1050(J)
Selenium isotopes Se^{77}
isomeric transition of, 6: 409
metastable state of, 6: 1909
Selenium isotopes Se^{81}
yields of isomers of, from (d,p) reactions, 6: 1424(R)
Selenium isotopes Se^{82}
deuteron (d,2n) cross sections, 6: 1015(J)
Selenium–thorium alloys
metallography of, with polarized light, 6: 1228
Semi-conductors
(See also specific materials.)
deuteron range-energy relation in, 6: 1032(J)
Semi-conductors (cont'd.)
electrical fluctuations in, theory of, 6: 1788(J)
localized electronic states in bombarded; 6: 557(J)
secondary photoconductivity in, 6: 1045(J)
Servomechanisms
proportional position controller, 6: 485(P)
Servomechanisms Lab., Mass. Inst. of Tech.
progress reports, 6: 296(R), 407(R)
Sewage
(See also Waste disposal.)
biochemical oxidation of, effect of radioactivity on,
decontamination of, 6: 1747
Sewage systems
concentration of I^{131} and P^{32} in, 6: 519(J)
contamination of, by I^{131}, 6: 883
contamination of, by P^{32}, 6: 789(R)
Shales
fluorimetric analysis of, for U, 6: 1136
Shielding materials
(See also specific materials.)
secondary gamma production in, 6: 1342
selection of, lecture on, 6: 1360
Shinarump formation
occurrence of U in, 6: 891(R)
Shock waves
effects on mechanically constrained mice, 6: 12
Showers
(See Cosmic radiation — showers.)
Silanes, fluororganic
preparation of, 6: 130(J)
Silicates
artificial crystallization of, 6: 1429
polarographic analysis of, for Li, 6: 820(J)
synthesis of, substituting F^- for $(OH)^-$, 6: 1429
Silicon
deuteron range-energy relation in, 6: 1032(J)
infrared spectra of, calculations, 6: 161(J)
localized electronic states in bombarded, 6: 557(J)
Silicon–aluminum alloys
grain refinement of, effect of various additions on, 6: 250(J)
Silicon–aluminum–magnesium alloys
grain refinement of, effect of various additions on, 6: 250(J)
Silicon–copper single crystals
plastic deformation of, 6: 1470(R)
Silicon–iron alloys
crystal structure of, 6: 1155
Silicon isotopes
mass defect of, 6: 1553
Silicon isotopes Si^{27}
beta spectra and half lives of, 6: 735
Silicon isotopes Si^{29}
gamma reactions (γ,p), 6: 1874(J)
nuclear magnetic moments of, 6: 994(J)
Silicon isotopes Si^{30}
gamma emission of, from Al (α,p), 6: 1878(J)
gamma reactions (γ,p), 6: 1874(J)
Silicon isotopes Si^{31}
beta spectra of, 6: 1553
Silicon oxide films
preparation of, for windows for gaseous radiation targets, 6: 955
Silicon oxides
(See also Quartz.)
production of, by chloride decomposition, 6: 1944(P)
Silicon–zirconium alloys
constitution diagrams of, 6: 591(R)
Silicone coatings
preparation of, for high temperature use, 6: 885
Silicones
corrosion of, by H_2O_2, 6: 240(J)
thermodynamic properties of, 6: 127(J)
Silicones (polymerized)
preparation of, for high temperature coatings, 6: 885
Silver
corrosion rate of, in ferric perchlorate, 6: 889, 1468
creep of, at 200°C, 6: 603(R)
deuteron range-energy relation in, 6: 1032(J)
electric conductivity of, effect of elastic deformation on, 6: 241(J)
electron scattering by, 6: 1035(J)
hyperfine structure of, 6: 1793
neutron and proton charge-exchange reactions in, 6: 1881(J)
photoelectron emission from, 6: 1295(J)
proton scattering cross sections of, 6: 1546

Silver (cont'd.)
wettability of, by glasses, 6: 201(R)
x-ray spectra, 6: 97(J)
Silver–aluminum alloys
fatigue mechanism in, 6: 1248(J)
Silver bromides
preparation of, 6: 89
Silver chloride crystals
nuclear interaction of cosmic rays in, 6: 1760(J)
Silver chlorides
preparation of, 6: 89
Silver–gold alloys
diffusion in, 6: 603(R)
Silver–gold couples
porosity of, metallographic studies on, 6: 1474
Silver isotopes Ag^{109}
isomeric transition of, 6: 409
Silver isotopes Ag^{110}
gamma spectra of, 6: 421(J)
Silver isotopes Ag^{111}
yield of, from proton-induced fission of U, 6: 1856
Silver–palladium couples
porosity of, metallographic studies on, 6: 1474
Silver single crystals
sintering of, 6: 603(R)
Single crystals
(See also by name of materials, e.g., Copper single crystals.)
apparatus for preparation of, 6: 1156(J)
crystallographic aspects of slip in body-centered cubic, theory of, 6: 1154
electron energy levels in, 6: 1272(J)
neutron-diffraction analysis of, 6: 721(J)
nuclear quadrupole spectra of, 6: 344(J)
plastic deformation of, 6: 1470(R)
ratios of critical shear stresses in mathematical analysis, 6: 1155
reflection of neutrons from, 6: 493(J)
structure determination of, from neutron diffraction data, 6: 619(J)
x-ray-diffraction analysis of, 6: 617
Sintering
(See also as subheading under materials.)
bibliographies on, 6: 602
Skin
effects of radiation on, 6: 506(R)
Skin diseases
occurrence of, following administration of I^{131} in hyperthyroid therapy, 6: 1087(J)
radiotherapy of, with As^{76}, 6: 1614(J)
Smokes
diffusion of, in the atmosphere, 6: 756
diffusion of, in lower layers of the atmosphere, 6: 576(R), 1516(R), 1517(R), 1518(R), 1519(R), 1520(R)
dispersal of, effects of velocity and temperature of discharge on, 6: 6: 675
Snow
radioactivity in, on Puy de Dome, France, 6: 1358(J)
Sodium
analysis of, for Ca, Mg, and K, 6: 815
chromatographic separation of, from Li, 6: 848(J)
combustion of, in controlled atmosphere, 6: 1630
determination of, by pile activation, 6: 549(J)
heat of reaction of, with water at 25°, 6: 1132(J)
infrared spectra of, calculations, 6: 161(J)
metabolism of, in x irradiated dogs, 6: 510(R)
neutron total cross sections for, 6: 1017(J)
spectrographic determination of, in organic solids, 6: 158
vapor pressure of, 6: 1670
Sodium (labeled)
preparation of, by exchange with labeled NaCl, 6: 1395(J)
Sodium (liquid)
compressibility of, temperature variation of, 6: 580(J)
thermal conductivity, of, 6: 232, 1444(J)
Sodium acetate
isotopic exchange reactions of, 6: 1626
Sodium borates
coloration of, 6: 142(J)
effects of Ra radiation on photoelectric current in, 6: 1168(J)
Sodium borohydrides
exchange reactions of, with H gas, 6: 1176
Sodium bromide–sodium sulfate systems
fused, phase studies of, 6: 1398(J)
Sodium carbonate systems
phase studies of UO_3, 6: 180
Sodium chloride–sodium sulfate systems
fused, phase studies of, 6: 1398(J)
Sodium chlorides
coloration and luminescence of, radiation-induced, 6: 142(J)
ionization of, 6: 541(J)
melting of, mechanism of structure breakdown in, 6: 118
photoelectric current in, moment of, 6: 1168(J)
self-absorption and self-scattering of β particles by, 6: 1344
vapor pressure determination of, 6: 1239(R)
Sodium dithionite
radiosensitivity effects of, 6: 46, 48
Sodium fluoferrates
infrared spectrum of, 6: 1667(J)
Sodium formates
radiosensitivity effects of, 6: 46
Sodium hydroxides
determination of, in presence of Na_2CO_3, 6: 109
Sodium iodide crystals
in gamma-ray spectrometers, 6: 647
polishing techniques for, 6: 1810(J)
preparation of, 6: 646
protective containers for, 6: 1811(J)
response of, to charged particles, 6: 966(J)
Sodium iodides
scintillation and luminescence of pure and Tl-activated, 6: 302(J)
Sodium isotopes
nuclear properties of, 6: 1928
Sodium isotopes Na^{21}
beta spectra and half lives of, 6: 735
Sodium isotopes Na^{23}
mass of, measurement, 6: 1284(J)
nuclear magnetic moments of, 6: 995(J)
proton reactions (p,n), excitation functions for, 6: 1021(J)
Sodium isotopes Na^{24}
formation of, by proton bombardment of Cu, 6: 700
nuclear spin of, 6: 1909
Sodium nitrites
radiosensitivity effects of, 6: 23
Sodium oxides
solubility of, in K, 6: 1237
solubility of, in Na-K alloys, 6: 1237
Sodium–potassium alloys
solubility of oxygen in, 6: 1237
Sodium–potassium alloys (liquid)
thermal conductivity of, at 200 to 815°C, 6: 232
Sodium sulfates
adsorption of dissolved "impurities" in, on liquid surfaces, 6: 176(J)
Sodium uranyl carbonate systems
phase studies of, 6: 180
Solid solutions
(See also subheading constitution diagrams under specific materials.)
phase studies of, 6: 1153
properties of, 6: 1153
statistical analysis of, 6: 1153
thermodynamic stability of, factors affecting, 6: 1467(R)
Solids
erosion of, by impingement of particles on, 6: 185
quantum theory of many electron problem in, 6: 754(J)
surface-area measurement of porous, 6: 1426
temperature and stress distribution in, equations for, 6: 863
theory of, 6: 1750(R)
Solutions
(See also subheading solubility under materials.)
energy absorption by externally irradiated, 6: 1343
fluorescence of, under γ and α radiation and dependence on concentration of solutes, 6: 1749(R)
Solvent extraction processes
(See also solvent extraction as subheading under material being extracted.)
bibliographies, 6: 1693(J)
theory of, 6: 1686
Solvents
(See also specific substances used as solvents.)
influence of mixed, on solubilities of salts, 6: 100(J)
thermodynamic properties of mixed aqueous-organic, 6: 1631
Sound
effects on mixtures, review, 6: 286

Spectrographic analysis
(See also as subheading under specific materials.)
for isotopic composition of elements, 6: 1573(P)
of refractory materials, carbon effect in, 6: 160(J)
Spectrometers
(See also Beta spectrometers; Gamma spectrometers; Mass spectrometers; Neutron spectrometers; Spectrographic analysis.)
double channel coincidence type, design, 6: 1499
focusing in, with sector-shaped, uniform magnetic field, 6: 450(J)
in investigating nuclear energy levels, 6: 424(J)
scintillation, design and improvement of resolving power of, 6: 1511
trajectories in an axial focusing double lens, 6: 1795(J)
two-meter crystal, design, 6: 446(R)
Spectrophotometers
design of, for cytochemical study, 6: 1374
Spectroscopy
(See also the subheading spectra under specific materials; see also Mass spectrography; Spectrographic analysis; Spectrometers.)
conference on molecular, in Basel, 6: 448
of radioactive molecules, principal problems in, 6: 443
Spectroscopy Lab., Univ. of Chicago
progress reports, 6: 1302(R)
Sperm
effects of radiation on respiration in, 6: 1084
Spheres
preparation of precise, and technique for drilling small holes in, 6: 861
velocity and pressure distribution of liquids flowing in, 6: 1440(R), 1441(R)
Spinels
(See also specific materials.)
thermal conductivity of, 6: 204
Spleen
blood perfused, supernatant plasmas of, for radiation protection, 6: 763
metabolism of lactates in, 6: 171(J)
role of, in x-radiation injury, 6: 520(R)
shielding of, as protection against radiation injuries, 6: 763
shielding of, during x irradiation, 6: 516(R)
Stable isotopes
(See also specific stable isotopes.)
production, separation, and applications of, 6: 287(J)
properties, lecture on, 6: 1261
separation of, by calutrons, 6: 1791
Stack disposal
(See also Fission products; Meteorology; Radiation; Smokes.)
iodine removal using a Cottrell electrostatic precipitator, 6: 1092
meteorological factors in, at BNL, 6: 780
method for, at ANL, 6: 518(J)
Stainless steel
cathodic sputtering of, 6: 252
corrosion of, by acids, 6: 1217
corrosion of, by Bi-Pb eutectic, 6: 901
corrosion of, by H_2O_2, 6: 240(J)
corrosion of, by H_3PO_4 aerated with He and by Ca and Na hypochlorite, 6: 1236
corrosion of, by liquid Bi, 6: 900
effects of liquid Bi-Pb alloy on, 6: 1723
electrochemical corrosion of, 6: 593
permeability of, to gases, 6: 1230(R)
permeability of, to He, 6: 272
thermal conductivity of, at 200 to 815°C, 6: 232
Statistics
(See also Mathematics.)
in study of properties of solid solutions, 6: 1153
Steam engineering
6: 489, 490
Steel
(See also Carbon steel and Stainless steel.)
behavior of, in the V-notch Charpy test, 6: 902
combustion analysis of, for carbon, 6: 592
corrosion of, by acids, 6: 1217
dynamic coefficients, 6: 245(J)
metallography of, with polarized light, 6: 1228
notch sensitivity of, effect of quench-aging on, 6: 1730
photometric analysis of, for Al, 6: 1139(J)
transformation of retained austenite in, 6: 595
Stilbene
preparation of crystals of, 6: 962(R)
response of crystals of, to charged particles, 6: 966(J)
scintillations in, 6: 961
Stilbene (cont'd.)
4,4-Stilbenedicarboxamidine
retention of, in liver cells, 6: 496(R)
Stomach
effect of ACTH on secretions of, 6: 7
Strain gages
design, calibration, and performance of wire resistance, 6: 936
Streptomycin
in therapy of radioinduced bacteremia, 6: 1384
Strontium
bone deposition of, 6: 1389
bone deposition of, effects of chemical agents on, 6: 69
chromatographic separation of, from Ba, Ca, and Mg, 6: 848(J)
ion exchange with U in uranyl nitrate, 6: 76
x-ray spectra, 6: 97(J)
Strontium complexes
with fatty acids, formation constants of, 6: 77
Strontium isotopes Sr^{89}
preparation of carrier-free, 6: 1422
Strontium isotopes Sr^{90}
beta spectra of, 6: 735
Styrene
kinetics of polymerization of, induced by γ radiation, 6: 1552(R)
Styrenes
properties and synthesis of, 6: 1177(R)
Sucrose
hydrolysis of, by invertase, 6: 1704(J)
production of, in photosynthesis, 6: 167
Sugars
(See also Carbohydrates; Hexoses.)
separation of, by ion exchange, 6: 148, 843(J)
Sugars (labeled)
synthesis of, 6: 1430
Sulfides
exchange reactions of, with thiocyanate ions, 6: 87
Sulfur
determination of, in Fe by H reduction, 6: 1658(R)
microdetection of, 6: 107
Sulfur coatings
on a mirror surface, 6: 1304(R)
Sulfur dioxide-heptane systems
diffusion in, 6: 537
Sulfur fluorides
infrared spectrum of S_2F_{10}, 6: 1411(J)
Sulfur isotopes S^{31}
beta spectra and half lives of, 6: 735
Sulfur isotopes S^{32}
abundance of, in nature, 6: 1793
binding energy of, calculation, 6: 333(J)
gamma reactions (γ,np), 6: 1871(J)
mass of, 6: 991(J), 1553
Sulfur isotopes S^{33}
mass of, 6: 991(J)
Sulfur isotopes S^{34}
mass of, 6: 991(J)
Sulfur isotopes S^{35}
beta spectra of, 6: 954(R)
beta spectra of, by nuclear-emulsion method, 6: 1560(J)
nuclear properties of, 6: 1928
radioautographic uses, 6: 795(J)
Sulfur isotopes S^{36}
mass, nuclear spin, and relative abundance of, 6: 340(J)
Sulfuric acid-phenol systems
diffusion in, 6: 804
Superconductivity
(See also as subheading under materials.)
isotopic factors in, of Hg, 6: 993(J)
Superconductors
audiofrequency experiments on, 6: 920(J)
Surface tension
(See also as subheading under specific materials.)
methods of measurement of, by glasses, 6: 202
Surfaces
area measurement of metals, 6: 897
area measurement of porous solids, 6: 1426
Suspensions
dynamics of particulate matter in fluid, 6: 184
Sweat cooling
(See also as subheading under materials and units cooled.)
protection achieved by, on porous metals, 6: 864

Synchrometers
(See Mass spectrometers.)
Synchroscopes
(See Oscillographs.)
Synchrotrons
(See also Brookhaven synchrotron.)
design of, 6: 714(J)
frequency modulated accelerating system for, 6: 380(J)
non-ferromagnetic, design, 6: 1883
target radiation in, angular distribution of, 6: 1885(J)
theory of, 6: 918
vacuum system for, 6: 586(J)
x-ray spectrum of, measurement of, 6: 1028
Szilard-Chambers Reactions
chemical separation by, 6: 1679(J)
in neutron-irradiated quinoline oxalate, 6: 1167(J)

Tantalum
activation determination of, in ores, 6: 1451
corrosion of, by Bi–Pb eutectic, 6: 901
corrosion of, by H_2O_2, 6: 240(J)
corrosion of, by liquid Bi, 6: 900
gamma absorption in, 6: 1533
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
oxidation of, cubic law of, 6: 1462
physical properties of, bibliography on, 6: 905
proton reactions (p,n), 6: 1859
proton reactions (p,n), thick-target yield in, 6: 1535
purification of, by volatilization or solution of chlorides, 6: 847(J)
scattering of neutrons by, 6: 980
separation of, from Nb, 6: 846(J)
thermal capacity of, 6: 560
Tantalum borides
crystal structure and properties of, 6: 120
Tantalum bromides
trouton constants of, 6: 810(J)
Tantalum carbide–titanium carbide–tungsten carbide systems
phase studies of, 6: 1126(J)
Tantalum chlorides
trouton constants of, 6: 810(J)
Tantalum–chromium alloys
crystal structure of, from x-ray-diffraction data, 6: 1249(J)
Tantalum electrodes
formation and polarization of anodic oxide films on, 6: 1227
Tantalum fluorides
vapor pressure of, 6: 810(J)
Tantalum iodides
trouton constants of, 6: 810(J)
Tantalum–iron–nickel alloys
composition and physical properties of, 6: 909(J)
Tantalum isotopes Ta^{181}
deuteron reactions (d,n), 6: 152
gamma absorption cross sections of, 6: 1326
gamma cross sections of, 6: 364, 1012(J), 1871(J)
Tantalum isotopes Ta^{182}
decay schemes of, 6: 424(J), 444(R)
Tantalum–molybdenum alloys
phase studies of, 6: 1256(J)
Tantalum ores
activation analysis of, for Ta, 6: 1451
Tantalum oxides
electrolysis of, in phosphate melts, 6: 811(J)
Tantalum phosphides
preparation of, by electrolysis, 6: 811(J)
Tantalum–titanium alloys
phase studies of, 6: 1732
Tantalum–zirconium alloys
phase studies and tensile properties of, 6: 1475(R)
Technetium
separation of, from fission products, 6: 1424(R)
Technetium isotopes
decay schemes of, 6: 1907
Technetium isotopes Tc^{99}
beta spectra of, 6: 1048
internal conversion in, effect of chemical combination on, 6: 733
isomeric transition in, effect of chemical combination on, 6: 734
Technetium sulfides
preparation of, 6: 1397(J)
Teeth
from Florida phosphate deposits, comparison with recent bones, 6: 764
Television tubes
(See Cathode-ray tubes.)
Tellurium
electroplating of, 6: 1304(R)
neutron resonance cross sections of, 6: 1304(R)
neutron scattering cross sections of, 6: 1304(R)
Tellurium isotopes Te^{121}
half lives and γ energies in, 6: 739(J)
isomeric magnetic dipole transitions in, 6: 335
Tellurium isotopes Te^{123}
half lives and γ energies in, 6: 739(J)
isomeric magnetic dipole transitions in, 6: 335
isomers of, upper limit to half lives of, 6: 1555
nuclear magnetic moments of, 6: 994(J)
Tellurium isotopes Te^{124}
energy levels, of, properties of, 6: 1914(J)
Tellurium isotopes Te^{125}
half lives and γ energies in, 6: 739(J)
isomeric magnetic dipole transitions in, 6: 335
isomers of, upper limit to half lives of, 6: 1555
nuclear magnetic moments of, 6: 994(J)
Tellurium isotopes Te^{127}
half lives and γ energies in, 6: 739(J)
preparation of carrier-free, 6: 1422
Tellurium isotopes Te^{129}
half lives and γ energies in, 6: 739(J)
preparation of carrier-free, 6: 1422
Tellurium isotopes Te^{131}
isomers of, yields of, 6: 1424(R)
Temperature
(See also Thermometry.)
effects on radiosensitivity, 6: 44(J)
effect on x-ray-induced chromosomes, 6: 26
Temperature recording devices
design and performance of, 6: 1780
Tennessee Univ.
progress reports, 6: 186(R), 504(R), 1441(R)
Terbium isotopes
alpha emission from, 6: 410, 1556
Terramycin
radiosensitivity effects of, 6: 50
Testosterone
biosynthesis of, from acetate, 6: 173(J)
Testosterone, 17α-ethynyl-(labeled)
synthesis of, 6: 170(J)
Thallium
diffusion of, in Sn, 6: 895
radiometric analysis of, 6: 535
Thallium complexes
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
Thallium–indium alloys
phase studies of, 6: 1238(R)
Thallium isotopes Tl^{201}
formation of, 6: 496(R)
Thallium isotopes Tl^{200}
formation of, 6: 496(R)
Thallium isotopes Tl^{200}
isomers of, upper limit to half lives of, 6: 1555
Thallium isotopes Tl^{204}
half lives of, 6: 1628
spectra of, 6: 1304(R)
Thallium isotopes Tl^{205}
internal conversion lines of, 6: 995(J)
Thallium nitrates
self-absorption and self-scattering of β particles by, 6: 1344
Thenoyltrifluoroacetone complexes
(See Acetone, thenoyltrifluoro- complexes.)
Thermal analysis
(See Differential thermal analysis.)
Thermal conduction
(See also Heat transfer.)
solution of a differential equation in two- and three-dimensional problems, 6: 1714
Thermal conductivity
(See also as subheading under specific materials.)
measurement of, for refractory materials, 6: 204
methods of measurement of, for liquid metals, 6: 1444(J)
Thermal neutrons
absorption cross section of Li^7 for extra-nuclear contribution to, 6: 1873(J)
density of, diffusion of, diffusion lengths of, in heavy water, 6: 1931

Thermal neutrons (cont'd.)
detection and measurement of, in reactors, 6: 666(J)
detection of, by liquid scintillators containing B, 6: 1286
detection of, by proportional counters, 6: 1288
diffraction of, by single crystals, 6: 721(J)
scattering of, in liquids, 6: 726(J)
theory of fluctuation scattering of, in solids, 6: 1830
Thermal reactors
(See also specific thermal reactors.)
design of, lecture on, 6: 1323
Thermocouples
(See also Pyrometers; Thermometers.)
calibration of Mo-W, Ta-W, and Nb-W, 6: 276
calibration of W-Mo, 6: 1259(J)
development of, for operation at 1600 to 2000°C, 6: 1498
manuals on, 6: 627
as neutron-density detectors, 6: 1583(P)
nomographs, 6: 1713
performance of bare-wire, in air streams, 6: 1713
performance of Pt/Pt-Rh, 6: 1226
thermoelectric potential of Hg-Fe, 6: 579
Thermodynamics
(See also thermodynamic properties under specific materials; see also Physics.)
tables of heats, free energies, and entropies in liquid ammonia, 6: 809
Thermometers
(See also Bolometers; Pyrometers; Thermocouples.)
calibration of, for low temperature measurements, 6: 1484
for use in range 2 to 20°K, 6: 1280(J)
Thermometry
6: 960(R)
bibliographies and manuals on, 6: 627
Thickness gages
design and performance of, 6: 937
design of, based on γ-ray transmission, 6: 191
Thiocyanate complexes
spectrophotometric analysis of, 6: 539
Thiocyanates
exchange reactions of, with sulfide and cyanide ions, 6: 87
Thiophosphoryl fluoride
microwave spectra and structure of, 6: 1165
Thiourea complexes
(See Urea, thio- complexes.)
Thorium
colorimetric determination of, in low-grade minerals, 6: 1401
decay schemes of, 6: 444(R)
determination and separation of, from U, 6: 1148(J)
gamma spectra of, 6: 446(R)
ion exchange with U in uranyl nitrate, 6: 76
neutron emission, in spontaneous fission of, 6: 1851(J)
separation from rare earths with anisic acid, 6: 1147(J)
separation from rare earths with camphoric acid, 6: 1150(J)
slow neutron transmission of, 6: 984
toxicology of, 6: 526(R)
Thorium-aluminum alloys
metallography of, with polarized light, 6: 1228
Thorium chloride complexes
in aqueous solution, ionizatioh of, 6: 1625
Thorium complexes
with chloride, fluoride, nitrate, phosphate, and sulfate, 6: 1130(J)
with chloride and thenoyltrifluoroacetone in water, ionization of, 6: 1625
Thorium compounds
toxicology of inhaled, 6: 528
Thorium fluorides
magnetic properties of solutions of, with UF_4, 6: 857(J)
Thorium hydrides
explosive limits of, 6: 1627
Thorium isotopes
decay schemes of, 6: 1907
Thorium isotopes Th^{234}
separation of, from Pa^{234} by ion exchange, 6: 437(J)
Thorium-magnesium-zirconium alloys
metallurgical properties of, 6: 903(R)
Thorium nitrate-water systems
phase studies at 20 to 160°C, 6: 82
Thorium nitrates
solubility in hexanol and octanone, effects of impurities on, 6: 83
Thorium ores
(See also Monazite.)
bibliographies on, 6: 212
radioautographic analysis of, 6: 1809(J)
Thorium oxide-cerium oxide systems
reduction of, by H_2, 6: 1683(J)
Thorium oxides
thermal conductivity of, up to 1300°C, 6: 1488(R)
Thorium powders
explosive limits of, 6: 1627
Thorium-selenium alloys
metallography of, with polarized light, 6: 1228
Thulium isotopes Tm^{170}
spectrum of, Fermi analysis, 6: 1356(J)
Thyroid diseases
therapy of, with I^{131}, 6: 67(J), 68(J)
Thyroid gland
effect of radiation on activity of, 6: 31
effects of adrenaline on, 6: 1075
histological and pathological effects of I^{131} on, 6: 1604(J)
radioautographic analysis of, using At and I, 6: 49(R)
Thyronine
effects on ascorbic acid oxidation, 6: 80
Thyronine, 3,5-diiodo-
effects on ascorbic acid oxidation, 6: 80
Thyroxine
effects on ascorbic acid oxidation, 6: 80, 803
Thyroxine, sodium derivatives
effects on ascorbic acid oxidation, 6: 80
Time measurement
(See also specific instrument used, i.e., Oscillographs; Pulse generators, etc.)
equipment for, 6: 479(P)
Tin
absorption of photons of cosmic radiation in, 6: 258(J)
colorimetric determination of, 6: 1137
corrosion of, by H_2O_2, 6: 240(J)
deuteron range-energy relation in, 6: 1032(J)
dynamic coefficients of, 6: 245(J)
electric properties of, in superconducting state, 6: 920(J)
electrolytic separation and determination of, 6: 1138(J)
gamma absorption in, 6: 1533
x-ray spectra, 6: 97(J)
Tin-copper alloys
phase studies of, 6: 600(R), 1238(R)
Tin isotopes
superconductivity of, measurement, 6: 1748
Tin isotopes Sn^{113}
decay schemes of, 6: 739(J)
Tin isotopes Sn^{117}
energy levels and half lives of, 6: 739(J)
isomeric magnetic dipole transitions, 6: 335
Tin isotopes Sn^{118}
neutron activation cross section of, 6: 1052(J)
Tin isotopes Sn^{119}
gamma emission and conversion electrons from, 6: 1052(J)
isomeric magnetic dipole transitions in, 6: 335
Tin isotopes Sn^{123}
decay schemes of, 6: 739(J)
yield and half lives of, from U^{233} and U^{238} fission, 6: 1857
Tin isotopes Sn^{124}
binding energy of, calculation, 6: 333(J)
Tin-lead alloys
dynamic coefficients of, 6: 245(J)
Tin oxide compacts
thermal and mechanical properties of, with 1% ZnO, 6: 884
Tin oxides
colorimetric analysis of, 6: 1137
Tin-zirconium alloys
constitution diagrams of, 6: 591(R)
Tissue culture
photography as an aid in observation of changes in, 6: 797(J)
Tissue homogenates
radiosensitivity effects of, 6: 520(R)
Tissues
(See also the specific tissues.)
dosage determination of fast neutrons and gamma radiation in standard, 6: 1508
effects of radiation on, 6: 34
ionization of, at various depths, 6: 404(J)
radiometric analysis of, 6: 512(J)
radiometric analysis of, by dissolving in scintillating liquids, 6: 294
radiometric analysis of, sample preparation for, 6: 965(J), 968(J)
respiration of, 6: 792

Titanates
organic, association of, in benzene solution, 6: 1120(J)
Titanium
cathodic sputtering of, 6: 252
coatings for, 6: 604(R)
combustion analysis of, for carbon, 6: 592
corrosion of, by HCl and H_2SO_4, 6: 588
corrosion of, by H_3PO_4 aerated with He and by Ca and Na hypochlorite, 6: 1236
crystal structure of, effect of heat-treatment and additions of O_2, C, and N_2 on, 6: 238(J)
crystal structure of, effect of O on mechanical properties and working of, 6: 1247(J)
electrochemical corrosion of, 6: 597(R)
electrolysis of, 6: 597(R)
electrolytic preparation of, 6: 1691(J)
electroplating of, 6: 604(R)
fabrication and machining of, 6: 906(J)
grain refinement by addition of, to Al alloy castings, 6: 1253(J)
grinding of, 6: 910(J)
infrared spectra of, calculations, 6: 161(J)
metallography of, with polarized light, 6: 1228
metallurgy symposium, properties and possible uses of, 6: 237
oxidation of, cubic law of, 6: 1462
oxidation of, logarithmic growth law for, 6: 161(J)
production of, review of methods for, 6: 913(J)
spectrophotometric analysis of, with thymol, 6: 1149(J)
spectrophotometric determination of traces, in Zr using tiron, 6: 1656
Titanium alloys
grinding of, 6: 910(J)
metallurgy symposium, properties and possible uses of, 6: 237
Titanium–aluminum alloys
constitution diagram and microstructure of, 6: 908(J)
crystal structure of, from x-ray diffraction data, 6: 1243(J)
preparation of, from TiO_2 and Al powder, 6: 607(J)
Titanium borides
crystal structure and properties of, 6: 120
Titanium carbide–tantalum carbide–tungsten carbide systems
phase studies of, 6: 1126(J)
Titanium carbides
high-temperature reactions with metals, 6: 1216(J)
reactions of, with boron carbide above 1920°, 6: 208(J)
Titanium compounds
molecular electric moments of, 6: 1128(J)
Titanium couples
corrosion of, by synthetic ocean water aerated with He, 6: 1236
Titanium hydrides
explosive limits of, 6: 1627
Titanium–iron alloys
surface tension of, 6: 1449(R)
Titanium isotopes Ti^{47}
nuclear magnetic moment of, 6: 1850(J)
Titanium isotopes Ti^{49}
nuclear magnetic moment of, 6: 1850(J)
Titanium–lead couples
corrosion of, by synthetic ocean water, 6: 1236
Titanium–manganese alloys
phase studies of, 6: 1732
Titanium oxides
dielectric properties of, measured by electromagnetic resonators, 6: 1493
electric and thermoelectric properties of partially reduced, 6: 206(J)
production of, by chloride decomposition, 6: 1944(P)
Titanium(III) oxides
adsorption of A on, 6: 154(J)
Titanium(IV) oxides
ceramic containing, properties of, 6: 886(P)
electric conductivity of, in polycrystalline annealed, 6: 1214
high-voltage polarization of, in polycrystalline annealed, 6: 1215(J)
ionization of, 6: 541(J)
reduction of, by Al powder, 6: 607(J)
Titanium powders
explosive limits of, 6: 1627
Titanium–tantalum alloys
phase studies of, 6: 1732
Titanium–tungsten alloys
phase studies of, 6: 1732
Titanium–zirconium alloys
constitution diagrams of, 6: 1229
corrosion of, by Al chlorides, Na and Ni, 6: 1236
phase studies of, 6: 233
properties of, 6: 1229
Toluene
ionization potential of, by mass spectrography, 6: 291(J)
Tomography
(See also Radiography.)
thickness of layers taken in, calculation of, 6: 1099(J)
Topology
convex bodies, symmetrization of, 6: 949
convex regions associated in subspaces, 6: 948
convex sets and additive set functions, 6: 950
Torbernite
occurrence of, in Clear Creek County, Colorado, 6: 214
Torbenite deposits
exploration of, for U in Grant Co., New Mexico, 6: 1457
in Missouri fire clay, 6: 1728(J)
Torpedo Experimental Establishment, Greenock (Great Britain)
progress reports, 6: 859(R)
Towne Scientific School, Univ. of Penn.
progress reports, 6: 229(R), 1658(R)
Tracer techniques (biology)
bibliography, 6: 73(J)
Tracer techniques (botany)
review of, 6: 1621(J)
Tracer techniques (metallurgy)
for assessing wear of wire-drawing dies, 6: 195(J)
Tracer techniques (mineralogy)
use of, in flotation and beneficiation studies, 6: 251(R)
Trauma
surgical, effects on polysaccharide and sulfhydryl levels in blood plasma 6: 1594
surgical, effects on sulfhydral content of blood plasma, 6: 1593
Treasure Hill Area (Colorado)
geology and prospecting of, for U, 6: 1456
Treasure Hill Claims (Colorado)
prospecting of, for U, 6: 1456
Trisilylamine
molecular structure of, 6: 136
Tritium
(See also Hydrogen.)
deuteron, proton, and triton absorption and scattering by, 6: 1859
mammalian uptake of, by lung, from labeled water vapor, 6: 1088(J)
neutrino mass from β spectrum of, 6: 1837(J)
neutron production by (d,n) reaction in, 6: 1525
nuclear properties of, 6: 1928
photodisintegration cross sections of, calculations, 6: 1868(J)
radioautographic uses of, 6: 61(J)
tolerance levels of, 6: 1088(J)
toxicology of, 6: 526(R)
Tritons
acceleration of, by Cockcroft-Walton accelerator, 6: 1886(J)
measurement of tracks of, in nuclear emulsions, 6: 644
range-energy relation of, from $Be^9(d,t)$, 6: 375(J)
reactions of, with deuterons, 6: 1528
Tubes
(Generally thin-walled, small diameter; see also subheading under specific reactors; see also Electron tubes; Geiger-Mueller tubes; Pipes; Reactor tubes.)
heat transfer in, by forced convection, 6: 867
Tumors
(See also specific tumors, organs, tissues, animals, etc.; see also the subheading biological effects under radiations; see also Carcinomas; Sarcomas.)
of bone, diagnosis and treatment with radioactive Ga, 6: 1106(J)
effects of cysteine on radiosensitivity of, 6: 1608
effects of radiation on cells of, 6: 65(J)
enzymes of the citric cycle in, 6: 761
of head and neck, treated with Co^{60}, 6: 1103(J)
induced by β particles in rats, 6: 506(R)
induced by I^{131}, 6: 776(J)
lymphoid, inhibition of, by shielding during partial-body irradiation, 6: 1382(J)
metabolism of lactates in, 6: 171(J)
origin of, mutation theory of, 6: 18(J)
pituitary, induced in mice by I^{131}, morphology of, 6: 1076, 1080
pyruvate oxidation in mitochondria of, 6: 760
radiosensitivity effects of, 6: 520(R)
skin, radiotherapy of, with As^{74}, 6: 1614(J)
toxicity of, therapy with vitamin B_{12}, 6: 55(J)
transplantation of I^{131} produced pituitary, to normal and I^{131} treated hosts, 6: 1080
Tungsten
corrosion of, by liquid Bi, 6: 900
electric conductivity of, effect of elastic deformation on, 6: 241(J)

Tungsten (cont'd.)
gamma reactions (γ,n) at 320 and 160 Mev, 6: 1538
proton reactions (p,n), 6: 370(J), 1859, 1887
proton reactions (p,n) thick-target yield in, 6: 1535
Tungsten carbide–tantalum carbide–titanium carbide systems
phase studies of, 6: 1126(J)
Tungsten carbides
metallography of, with polarized light, 6: 1228
Tungsten isotopes W^{181}
separation of, from deuteron bombarded Ta, 6: 152
Tungsten isotopes W^{183}
isomeric transition of, 6: 409
Tungsten isotopes W^{187}
decay schemes of, 6: 444(R)
gamma spectra of, 6: 446(R)
Tungsten minerals
diagnostic associates in Morocco, 6: 1460(J)
Tungsten–titanium alloys
phase studies of, 6: 1732
Tungsten–zirconium alloys
constitution diagrams, 6: 591(R)
Turbojet engines
control systems for, mathematical analysis of, 6: 860
design of, for nuclear aircraft, 6: 1589

Ultrasonic radiation
isotope separation by, 6: 286
Ultraviolet radiation
effects on grasshopper neutroblasts, 6: 43(J)
lethal effects on yeast, 6: 10
Uranium
absorption of γ radiation by, 6: 680(R)
abundance of, in meteorites, 6: 1754
concentration of, in sea water by fluorimetry, 6: 1403(J)
coulometric analysis of, for V, 6: 574(J)
coulometric determination of, 6: 90(R)
crystal structure of, 6: 121(J)
crystal structure of β phase, 6: 1183
deformation textures of, 6: 1478(J)
determination of, in U-Hg alloys, 6: 545
fission, theory of, 6: 1840
fission products of, Be^7 in, 6: 358
fluorimetric determination of, in lignites, monazites, and shales, 6: 1136
fluorimetric determination of, in minerals, 6: 1404(J)
gamma absorption in, 6: 1543
ion exchange with fission products and Th, 6: 76
magnetic susceptibility of, 6: 1433, 1943(J)
meson induced fission of, 6: 1860
metallography of, with polarized light, 6: 1228
neutron capture cross section of, 6: 1540(J)
occurrence in Utah (Piute Co.) 6: 1221, 1222, 1223, 1224
oxidation of, in O_2, 6: 1435(J)
photofission of, isotope yields in, 6: 1424(R)
plastic deformation of, mechanism of, 6: 226
potentiometric determination of, in presence of Fe, 6: 1649
preferred orientation in rolled, 6: 1477(J)
production of, from UO_2, review of methods for, 6: 218(J)
reaction between U(VI) and U(IV) in carbonate media, polarographic study of, 6: 855
reaction of, with H_2, HD, and D_2, 6: 573
reduction of, by Cd amalgam and coulometric titration of, 6: 1400
separation of Th from, 6: 1148(J)
toxicology of, 6: 526(R)
yields of Ba^{140}, Mo^{99}, and Ag^{111} from proton fission of, 6: 1856
Uranium alloys
magnetic susceptibility of, 6: 1433
Uranium–aluminum alloys
metallography of, with polarized light, 6: 1226
Uranium carbides
preparation of, methods for, 6: 1564(P)
Uranium(IV) chlorides
adsorption spectra of, 6: 1628
production of, from uranium oxide, 6: 463(P)
Uranium(V) chlorides
preparation of, process and apparatus for, 6: 1569(P)
Uranium(VI) chlorides
preparation of, process and apparatus for, 6: 1569(P)
production of, from uranium pentachloride, 6: 460(P)
purification and packaging of, 6: 466(P)
Uranium–chromium alloys
crystal structure of, 6: 121(J)
crystal structure of β phase, 6: 1183
magnetic susceptibility of, 6: 1433
Uranium–cobalt alloys
of composition UCo_2, 6: 471(P)
magnetic susceptibility of, 6: 1433
Uranium–cobalt compounds (intermetallic)
of composition U_6Co, 6: 472(P)
Uranium deposits
diagnostic associates, 6: 1458
origin of, in Shinarump Formation, Colorado Plateau, 6: 851(R)
Uranium fluorides
magnetic properties of solutions of, with ThF_4, 6: 857(J)
Uranium(VI) fluorides
mass spectrographic separation of U isotopes in, methods of calculation of, 6: 288
Uranium hydrides
explosive limits of, 6: 1627
Uranium isotopes
mass spectrographic separation of, in UF_6, 6: 288
rapid separation methods for, from cyclotron bombarded $Th(NO_3)_4$, 6: 1481
Uranium isotopes U^{233}
fission product yields, 6: 1857
Uranium isotopes U^{235}
fission of, 6: 493(J), 698
fission of, ternary, 6: 707(J)
fission products of, 6: 1327(J)
fission product yields, 6: 1857
nuclear properties of, 6: 1928
Uranium isotopes U^{238}
binding energy of, calculation, 6: 333(J)
decay of, fine structure in, 6: 1921(J)
Uranium isotopes U^{239}
internal conversion of, 6: 409
Uranium–magnesium alloys
metallography of, with polarized light, 6: 1228
Uranium–manganese alloys
magnetic susceptibility of, 6: 1433
Uranium–mercury alloys
chemical analysis of, 6: 545
Uranium minerals
(See also specific minerals and ores; see also Uranium ores.)
occurrence of, in Clear Creek County, Colorado, 6: 214
Uranium–molybdenum alloys
chemical analysis of, 6: 544
Uranium–nickel alloys
magnetic susceptibility of, 6: 1433
Uranium ores
(Including tailings, residues, etc., worked for recovery of uranium; see also specific ores, e.g., Carnotite ores; Chattanooga shales; Pitchblende; etc.; see also Uranium minerals.)
beneficiation of, 6: 251(R)
bibliographies, 6: 212
extraction of U from, in Norway, 6: 217(J)
occurrence of, in Argentina, 6: 215(J)
radioautographic analysis of, 6: 1809(J)
radiometric analysis of, for U_3O_8, 6: 1220
Uranium(VI) oxide systems
phase studies of, 6: 180
Uranium oxides
composition of, 6: 856(J)
electrodeposition of, process for, 6: 1568(P)
lung deposition and retention of, following inhalation, 6: 1089(J)
refining of, review of methods, for, 6: 218(J)
Uranium(IV-VI) oxides
production of, from ores in Norway, 6: 217(J)
radiometric determination of, in uranium ores, 6: 1220
Uranium powders
explosive limits of, 6: 1627
Uranothorite
occurrence and identification of, in Blue Jay Mines, 6: 1453
Uranyl carbonate systems
phase studies of, 6: 180
Uranyl chlorides
raman spectra of, 6: 156
Uranyl nitrate systems
ions exchange in, involving Th and fission products, 6: 76
Uranyl nitrates
fission activity distribution in bombarded, 6: 731
Raman spectra of, 6: 156

Uranyl sulfate complexes
potentiometric and extinctiometric studies of, 6: 1434(J)
Urea, thio- complexes
with Ru, formation and properties of, 6: 1119
Urine
analysis of, 6: 1(R)
analysis of, for gross radioactivity, 6: 103
analysis of, for polyglucose, 6: 1652
effect of saline and pituitary hormone on excretion of, by the rat, 6: 1622(J), 1623(J)
radiometric analysis of, for K, 6: 1116
Utah (Piute Co.)
U exploration of Benny K claims, 6: 1221
U exploration of Dark Horse and Saturday Claims areas, 6: 1224
U exploration of East Slope Area, 6: 1222
U exploration of Papsy's Hope prospect, 6: 1223

V particles
detection of decay products of neutral, 6: 1872(J)
formation and decay schemes of neutral, 6: 1488
formation of neutral, by bremsstrahlung on C and Pb, 6: 1872(J)
mass and decay schemes of, 6: 264(J)
Vacuum gages
design of, 6: 1750(R)
design of, based on optical absorption in Schumann region, 6: 879(J)
design of ionization-type, 6: 1804(J)
design of, using α-particles, 6: 587(J)
review of, for pressures below 10 mm Hg, 6: 582(J)
for synchrotron vacuum system, performance of, 6: 1209(J)
Vacuum pumps
control of, 6: 196
design modification of, to simplify oil changing, 6: 877(J)
efficiency of, effect of oil distillation on, 6: 880(J)
portable laboratory stand for, 6: 1208(J)
types of, review and comparison of, 6: 194(J)
Vacuum seals
design of, for fluorine generations system, 6: 470(P)
Vacuum systems
application of mass spectrometers to problems of, 6: 585(J)
design of apparatus for introduction of gas to give known pressure in, 6: 881(J)
design of industrial, 6: 198(J)
leak detection in, 6: 583(J)
manifold for, 6: 1210(J)
measurement of pressure and contamination in, 6: 1804(J)
for a proton synchrotron, 6: 586(J)
techniques concerning, book on, 6: 197
valve for, pneumatically controlled, 6: 1725(J)
Vacuum techniques
manuals on, for beginners, 6: 878
Vagomimetic substances
effects on survival of x-irradiated mice, 6: 1093
Valeric acid, α-bromo-
polarographic behavior of, 6: 538
Valves
design of high pressure, 6: 575
Van de Graaff accelerators
(For Van de Graaff machines used for instruments other than accelerators see also Van de Graaff generators.)
design of, at University of Zürich, 6: 1884(J)
gaseous insulator for, SF_6, 6: 1393(R)
neutron background of, 6: 1535
operation of, 6: 1821(R)
Vanadium
by-product recovery of, from phosphate rock, 6: 1727
by-product recovery of, from titaniferous magnetite, 6: 911(J)
colorimetric determination of, 6: 90(R)
combustion analysis of, for C, 6: 592
coulometric determination of, in U, 6: 574(J)
electroplating of, 6: 599(R)
oxidation-reduction states of, 6: 542(J)
superconductivity of, 6: 1739(J)
Vanadium alloys
sigma phase in, 6: 1246(J)
Vanadium borides
crystal structure and properties of, 6: 120
Vanadium complexes
with H_2O, CH_3OH, C_2H_5OH, and iso-C_4H_9OH, absorption spectra of, 6: 1644(J), 1645(J), 1647(J)
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
Vanadium(IV) ions
chemical properties of, 6: 542(J)
Vanadium(V) ions
chemical properties of, 6: 542(J)
Vanadium-nickel alloys
structure of sigma phase of, 6: 1476(J)
Vanadium oxides
electrolysis of, in phosphate melts, 6: 811(J)
preparation of, by electrolysis, 6: 811(J)
sols of, coagulation with Au, $Fe(OH)_3$ and AgI sols, 6: 95(J)
Vanadium phosphides
preparation of, by electrolysis, 6: 911(J)
Vapor pressure
(See also as subheading under materials.)
apparatus for determining, of Na, 6: 1670
methods of measurement, 6: 275
temperature variation of, nomographs, 6: 254
Virial coefficients
second, of a 6-9 gas at high temperatures tabulated results, 6: 1491
Virus
effects on uptake of C^{14} from glucose by amino acids in mouse brain, 6: 72(J)
Vitamin B_{12}
effects of ionizing radiation on, 6: 511(J)
therapeutic effects of, in radiation sickness and tumor toxicity, 6: 55(J)
Vitamins
(For instances of known chemical nature see also as organic compounds.)
effects on glycogen and nitrogen metabolism of liver after irradiation, 6: 1393(J)
Vitro Corp. of America
progress reports, 6: 830(K), 1184(R)
Voltage regulators
(See also Power supplies.)
design of, 6: 1575(P)
design of, for electroplating control, 6: 1777
Voltmeters
design of, for continuous current, 6: 1786(J)

Waste disposal
(For treatment of radioactive process wastes prior to disposal see Waste processing; see also the subheading waste disposal under specific chemical processes; see also Bacterial slimes; Sewage systems; Stack disposal.)
effects of atomic energy industries on, 6: 1195(J)
environmental problems of radioactive, lecture on, 6: 1212
of I^{131} by dilution, 6: 883
lecture on, 6: 781
liquid storage, 6: 882(R)
problems in treatment of radioactive, lecture on, 6: 1213
solid storage as a means of, at Knolls Atomic Power Lab., 6: 1436
system for, at ANL, 6: 518(J)
Waste processing
(Treatment of radioactive wastes to achieve reduction in volume and decontamination prior to disposal; for recovery of an element from filter cakes, raffinates, salvage wastes, etc., see the subheading recovery under the element; see also Waste disposal.)
by evaporation, 6: 1211
by evaporation, filtration, and incineration, and scrubbing, as practiced at Knolls Atomic Power Lab., 6: 1436
by evaporation and incineration, 6: 882(R)
by filtration, 6: 1747
flow sheets for, at ANL, 6: 518(J)
ion exchange, 6: 1628
ion exchange unit for, in laboratories, 6: 830(R)
problems in treatment of radioactive, lecture on, 6: 1213
for removal of Pu, 6: 858(J)
for removal of radioisotopes from water, 6: 54(J)
Water
(See also Radioactive waters; Rainwater.)
absorption of x radiation by, 6: 392(J)
decomposition of, by γ and x radiation, 6: 1678
decomposition of, by x radiation, 6: 1605(J)
decontamination of radioactive, method for, 6: 1(R), 1610
decontamination of, using Fe form of National Aluminate cationic resin (HCR-Fe), 6: 1184(R)
effects of radiation on, 6: 556, 1628
monitoring, 6: 1(R), 277(R)
photolysis of, by illuminated chloroplasts, 6: 567
removal of P^{32} and I^{131} from, 6: 515

Water (cont'd)
radioisotope removal from, 6: 54(J)
reactions in, produced by α-particles, 6: 143(J)
reactions in, produced by ionizing radiation, 6: 144(J)
thermo-osmosis of vapor through rubber, 6: 1776(J)
Water-d_2
electrolysis of, automatic apparatus for, 6: 828(J)
mass spectrographic analysis of, 6: 547
Water supplies
(including plants, sources, distribution, storage, etc.)
analysis of, for Ra, 6: 510(R)
effects of atomic energy industries on, 6: 1195(J)
Welding
(Including gas, diffusion, arc, and resistance welding; see also specific materials and fabricated units, and subheading welding where provided.)
laboratory unit for resistance, 6: 181
Well logging
calibration of diamond-drill-hole logging devices, 6: 1459
West Point Claim (Colorado)
prospection of, for U, 6: 1456
West Stands Reactor
construction and operation details of, 6: 353
White Oak Creek system
ecology of, 6: 1(R)
fish in, size of, 6: 11
White Signal District (New Mexico)
exploration of, for U, 6: 1457
Wind
velocity measurement of, 6: 1516(R), 1517(R), 1518(R), 1519(R)
velocity of, raw data, 6: 1520(R)
Wind tunnels
design of, for calibrating micrometeorological instruments, 6: 1519(R)
design of, for meteorological studies, 6: 677(R)
Wood
corrosion of, by H_2O_2, 6: 240(J)
Wyoming (Sweetwater Co.)
airborne radioactivity survey of, 6: 589

X radiation
(See also Gamma radiation; Photons.)
absorption of, by atoms in molecules, 6: 138(J)
from Am^{241} and Np^{237}, 6: 413
bibliography on effects of, on bacteria, 6: 1377
biological effects of, as compared to radon, 6: 763
biological effects, review of, 6: 783(J)
chemical effects on nitrogen mustards, 6: 1680(J)
chemical effects on solutions, 6: 1605(J)
chemical effects on water, 6: 144(J), 1678
detection and measurement of, 6: 59(R), 650(R)
detection of, by various phosphors, 6: 403(R)
dosage determinations of, 6: 668(J)
dosage determinations of, using dental film, 6: 1613(J)
dosages received by patients during diagnostic examination, measurement of, 6: 1100(J)
effects on antibody formation, 6: 1375
effects on bacteria, 6: 29, 47
effects on barley seed, 6: 41(J)
effects on cells, chemical modification of, 6: 49
effects on chromosomes, 6: 24, 26
effects on egg yolks, 6: 508
effects on electrolyte retention in muscle, 6: 1077
effects on enzymes, 6: 40(J)
effects on erythrocytes, 6: 778(J)
effects on fibrinogen, 6: 30
effects on gastro-intestinal transit and absorption availability, 6: 37
effects on halohydrocarbon solutions, 6: 1169(J)
effects on hematopoietic cells, 6: 36
effects on hematopoietic system, life span and reproductive system of reptiles, 6: 1090(J)
effects on metabolism in liver, 6: 56(J)
effects on nuclear emulsions, 6: 311(J)
effects on paramecium, 6: 46; 48, 140
effects on photographic film, 6: 730(J), 1681(J)
effects on polysaccharide and sulfhydryl levels in blood plasma, 6: 1594
effects on rats, 6: 50
effects on respiration in E coli., 6: 1079
effects on seed, 6: 32
effects on thyroid glands, 6: 31
effects on wheat roots, 6: 44(J)
genetic effects, metabolic and physiological effects of, 6: 506(R)
X radiation (cont'd.)
genetic effects of, on Drosophila, 6: 773(J)
induction of dominant lethals by, in mice, 6: 45
induction of lethal recessive factors by, 6: 769(J)
lethal dosage determinations of, compared with α particles, 6: 1607(J)
lethal dosage determinations of, for mice, 6: 506(R)
lethal effects of, as modified by shielding of intestine of rabbits, 6: 1083
mitotic effects on roots, 6: 39(J)
monitoring and yield integrating of, from betatron, 6: 1798
mutations induced by, in Drosophila, 6: 770(J)
oxidation and reduction produced by, 6: 146(J)
oxidation of arsenite in aqueous solution by, 6: 837(J)
permissible limits of, in therapy, 6: 42(J)
physiological effects of, on dogs, 6: 516(R)
physiological effects of, studied in respiration and development of irradiated eggs and sperm of sea urchin, 6: 1084
proportional counter for soft, 6: 309(J)
protection against, by ethanol, ethyl carbamate, cysteine, and nembutal, 6: 1386(J)
protection against, by methylamine, 6: 1385(J)
relation between electron current and intensity of, in high energy electron accelerators, 6: 1027
scattering of, by N, 6: 400(J)
scattering of, in liquids, 6: 726(J)
survey of personnel exposures to, in hospitals and clinics, 6: 779
synergistic effects of simultaneous systemic and local, on lymphosarcoma, 6: 1082
wavelength of, at a depth in water, 6: 392(J)
X-ray-diffraction analysis
(See also as a subheading under specific materials.)
films for, 6: 971(J)
at low temperatures, equipment for, 6: 617
scattering factors for B, Be, C, F, H, He, Li, N and Ne, calculation of, 6: 1347(J)
use in thickness measurements of metal coated cylinders, 6: 1486
X-ray equipment
(See also Radiography; X radiation; X-ray-diffraction analysis.)
alignment of, 6: 62
attachments for use in tomographic photography, 6: 785(J)
design and operation of, 6: 403(R)
design and performance of, 6: 59(R)
design of, 6: 1(R)
X-ray microscopy
application to the study of deformed metals, 6: 1250(J)
X-ray shielding
design of, 6: 1582(P)
X-ray spectra
line widths in, 6: 1262(J)
methods of measurement of, synchrotrons, 6: 1028
Xanthates
adsorption of, on mineral surfaces, 6: 1628
Xenon
collision probability for slow electrons in, 6: 1490
fluorescence of, 6: 409
neutron scattering cross sections of, 6: 679
Xenon isotopes
radioactivity of, from fission, 6: 1839
Xenon isotopes Xe^{131}
energy levels of, from I^{131} β decay, 6: 436(J)
half lives of excited states of, 6: 426(J)
internal conversion of, 6: 422(J)
isomeric magnetic dipole transitions in, 6: 335
half lives of, 6: 1839
Xylene
absorption and fluorescence spectra of, 6: 1929
fluorescence of, α- or γ-induced, 6: 653(R)
D-Xylose (labeled)
synthesis of, from glucose, 6: 172(J)

Yeasts
biosynthesis of arginine by, 6: 794
genetic factors producing a triploid strain of, 6: 1591
lethal effects of ultraviolet radiation and photo-reactivation on, 6: 10
metabolism of, effects of x radiation on, 6: 506(R), 510(R)
metabolism of, studied by synthesis of adenine thiomethylriboside, 6: 1072
Ytterbium chlorides
activity coefficients of, in aqueous solutions, 6: 558
transference numbers of, 6: 563
Ytterbium isotopes
isomeric transition of, 6: 409

Ytterbium isotopes Yb^{175}
internal-conversion coefficients of, 6: 1555
Yttrium
deposition of, in bone, 6: 70
preparation of, by calcium reduction of chlorides, 6: 1171
x-ray spectra, 6: 97(J)
Yttrium isotopes Y^{90}
beta spectra of, 6: 735
Yttrium oxide–zirconium oxide systems
phase studies of, up to 2000°C, 6: 209(J)

Zeeman Lab., Amsterdam
research programs in spectroscopy and nuclear physics, 6: 1371
Zinc
electrolytic separation from U, 6: 90(R)
spallation products of proton–bombarded, 6: 1864
spectrophotometric analysis of, 6: 597(R)
Zinc–aluminum–magnesium alloys
corrosion of, mechanism of, 6: 248(J)
photometric analysis of, for Al, 6: 1139
Zinc complexes
dissociation of, in aqueous solions, 6: 564(J)
with 2-methyl-8-quinolinol, stability of, 6: 1141(J)
preparation, dissociation constants, and molar absorbancy indexes of, 6: 157
Zinc–copper alloys
diffusion in, 6: 603(R)
grain boundary diffusion in, 6: 1473(R)
Zinc–copper couples
diffusion of Zn in, 6: 601(R)
Zinc–copper–nickel alloys
casting, corrosion, and physical properties of, 6: 1465
Zinc isotopes Zn^{64}
gamma absorption cross sections of, 6: 1326
gamma cross section of, 6: 364
gamma reactions (γ,n), 6: 1871(J)
Zinc isotopes Zn^{65}
branching ratio of K capture to positron emission, 6: 427(J)
decay of, by K capture, 6: 1353(J)
Zinc isotopes Zn^{66}
energy levels and nuclear spin of, 6: 1015(J)
Zinc nitrates
distribution of, between water and 1-hexanol, 6: 102
solubility in benzene and hexanol, effects of impurities on, 6: 83
Zinc oxides
recrystallization and sintering of, mechanism of, 6: 117
solubility of, effect of pH on, 6: 597(R)
thermal conductivity of, 6: 204
Zinc single crystals
creep mechanism in, 6: 1733
plastic deformation of, 6: 1470(R)
recrystallization of, 6: 618(R)
Zircon
(See also Zirconium silicates.)
gravimetric analysis of, for Zr, 6: 113(J)
Zirconium
analysis of, 6: 1737(R)
anodizing of, 6: 225
cathodic sputtering of, 6: 252
chemical properties of, review, 6: 99(J)
combustion analysis of, for C, 6: 592
corrosion of, by H_3PO_4 aerated with He and by Ac and Na hypochlorite, 6: 1236
crystal structure of, effects O_2 and N_2 on, 6: 229(R)
determination of, by precipitation with benzilic acid, 6: 823(J)
determination of, by precipitation with cinnamic acid, 6: 1146(J)
determination of, by selenite method, 6: 1636
deuteron range-energy relation in, 6: 1032
diffusion of N in, 6: 898
electrochemical corrosion of, 6: 597(R)
electrodeposition of, from fused salts, 6: 1173(R)
electrolysis of, 6: 597(R)
gravimetric determination of, in zircon, 6: 113(J)
ion exchange properties of, 6: 86, 1636
metallography of, with polarized light, 6: 1228
phase studies and tensile properties of, 6: 1475(R)
physical properties of iodide refined and crude, 6: 1241(J)
preparation, melting, casting, and corrosion of, 6: 223(R)
Zirconium (cont'd.)
production of, by fused slat electrolysis, 6: 236(R), 1737(R)
separation of, from Hf, 6: 99(J), 844(J), 1175(J)
spectrographic determination of, 6: 1144(J)
spectrophotometric analysis of, for traces of Fe and Ti using tiron, 6: 1656
surface reaction of, with N, 6: 898
x-ray spectra, 6: 97(J)
Zirconium alloys
with Al, Cr, Cu, Mg, Mo, Si, Sn, W, constitution diagrams of, 6: 591(R)
corrosion of, by rocket fuels, 6: 1236
Zirconium borides
crystal structure and properties of, 6: 120
Zirconium borohydrides
preparation of, 6: 467(P)
Zirconium(IV) chloride complexes
thermal decomposition of, 6: 1636
Zirconium chlorides
compounds with alkyl benzoates, heats of formation of, 6: 1396(J)
reactions of, with phosphorus oxyhalogens, 6: 1636
Zirconium(IV) chlorides
dissociation of, production of Zr metal by, 6: 223(R)
preparation, purification, and handling of, 6: 275
vapor pressure of, by molecular effusion, 6: 275
Zirconium complexes
preparation, 6: 157
Zirconium compounds
organic, preparation and properties of, 6: 1636
Zirconium foils
preparation of, for corrosion testing, 6: 234
Zirconium hydrides
explosive limits of, 6: 1627
Zirconium iodides
physical properties, 6: 229(R)
Zirconium(IV) idodes
dissociation of, production of Zr metal by, 6: 223(R)
preparation of, 6: 223(R)
Zirconium isotopes
yields of, in U^{235} fission, 6: 1327(J)
Zirconium isotopes Zr^{92}
gamma emission from, 6: 419(J)
Zirconium isotopes Zr^{93}
preparation of carrier-free, 6: 1422
Zirconium–magnesium–thorium alloys
metallurgical properties of, 6: 903(R)
Zirconium–molybdenum alloys
crystal structure of, 6: 249(J)
Zirconium–niobium alloys
tensile properties of, 6: 1475(R)
Zirconium oxides
production of, by chloride decomposition, 6: 1944(P)
thermal conductivity of, up to 1300°C, 6: 1448(R)
Zirconium(IV) oxides
ceramic containing, refractory properties of, 6: 886(P)
preparation of, from Formosan sands, 6: 892(J)
refractory properties of, 6: 887(J)
stabilization of, by rare earth oxides, 6: 209(J)
Zirconium powders
explosive limits of, 6: 1627
Zirconium silicates
(See also Zircon.)
ceramic containing, refractory properties of, 6: 886(P)
Zirconium–tantalum alloys
phase studies and tensile properties of, 6: 1475(R)
Zirconium–titanium alloys
constitution diagrams of, 6: 1229
corrosion of, by Al chlorides, Na and Ni, 6: 1236
phase studies of, 6: 233
properties of, 6: 1229
Zirconyl chlorides
electric conductivity of aqueous solutions of, 6: 85
hydrolysis of, 6: 86
ion exchange properties of, 6: 86
Zoe reactor
(France)
experimental reactivity curves for, 6: 696(J)
neutron cross section measurement by oscillation of, 6: 697(J)
radioisotope production in, 6: 1325(J)

NEW NUCLEAR DATA

Summary of New Nuclear Data on Half Lives, Radiations, Relative Isotopic Abundances, Nuclear Moments, Neutron Cross Sections, Reaction Energies, and Masses

Prepared by National Bureau of Standards Nuclear Data Group with the Assistance of Readers

National Bureau of Standards Group: K. Way, G. H. Fuller, M. Wood, K. Thew, and A. Jurgens.

Readers: G. Friedlander and G. Scharff-Goldhaber, Brookhaven National Laboratory; P. Axel, University of Illinois; J. R. Stehn, Knolls Atomic Power Laboratory; L. Slack, Naval Research Laboratory; H. Pomerance, J. W. Cobble, F. D. McGowan, B. A. Soldano, and H. Zeldes, Oak Ridge National Laboratory; S. Frankel, University of Pennsylvania; W. E. Meyerhof, Stanford University

In this issue, Nuclear Science Abstracts presents its first cumulation of new nuclear data. The material cumulated here is that which has appeared in the first six numbers of NSA, Vol. 6 and thus consists of a tabular summary of measurements of nuclear constants reported in all journals between roughly July 1, 1951 and December 1, 1951. A few unintentional omissions have been noticed. The items overlooked will appear in succeeding numbers of NSA and will be incorporated in the next cumulation which will appear in NSA, Vol. 6, No. 12B.

ABBREVIATIONS

a	absorption measurement
a$\beta\gamma$	absorption of β's in coincidence with γ's
ace$^-$	absorption of conversion electrons
a coin	measurement by placing absorbers between counters in coincidence
α	total γ-ray conversion coefficient, N_e/N_γ
$\alpha_K, \alpha_L, \ldots$	γ-ray conversion coefficient for electrons ejected from the K,L, ... shell
b	coefficient in angular correlation function, $1 + b \cos^2 \theta$
B	band spectra method
Beγn	measurement by detection of photoneutrons from Be
cc	cloud chamber
ce$^-$	conversion electrons
chem	chemical separation of product following reaction
Cpt	Compton electrons
d	(1) deuteron, (2) descendant of, (3) days, when used as superscript
Dγn, Dγp	measurement by detection of photoneutrons or photoprotons from deuterium
EA	electrostatic analyzer
E_0	resonance energy
$E_\beta, E_\gamma, \ldots$	energy of β ray, energy of γ ray, ...
E1,E2, ...	electric dipole, electric quadrupole ...
f	fission, in abbreviations for methods of production or detection
F-K	Fermi-Kurie β energy distribution plot
Γ	resonance half-width (the whole width at half-maximum)
I	(1) spin in units of $h/2\pi$; (2) nuclear induction magnetic resonance method
ic	ionization chamber
K/L	α_K/α_L
M	molecular or atomic beam resonance method
M1,M2, ...	magnetic dipole, magnetic quadrupole ....
mb	millibarns
Mic	microwave method
mir	measurement by total reflection of neutron beam from mirror surface
ms	mass spectrometer
μ	(1) magnetic moment in units of nuclear magnetons, (2) micron, 10^{-4} cm
μs	microseconds
osc	pile oscillator method
para	paramagnetic resonance method
pc	proportional counter
pe$^-$	photo electrons
ppl	photoplates or emulsions
q	electric quadrupole moment in units of barns
Q	reaction energy in Mev
s	(1) spectrometer method, (2) seconds, when used as superscript
S	atomic-spectra measurement
scin	scintillation counter
sl	lens spectrometer
sl;ce$^-$	conversion electrons measured in lens spectrometer
st	strong
sπ	180° spectrometer
s$\pi\sqrt{2}$	double focusing spectrometer
σ	cross section in barns
σ_0	cross section at resonance energy, E_0
σ_a	absorption cross section
σ_{el}	elastic scattering cross section

σ_{in}	inelastic scattering cross section	τ	half life in units indicated
σ_s	scattering cross section	$\beta\gamma,\gamma\gamma$	$\beta\gamma$ or $\gamma\gamma$ coincidences
σ_t	total cross section	$\beta\gamma(\theta)$	angular correlation of β's and γ's in coincidence
t	triton, H^3		
th	thermal	d,p(θ)	angular distribution of protons with respect to deuteron beam
w, vw	weak, very weak		

Standard journal abbreviations are used.
All energies are given in Mev and all cross sections in barns unless otherwise stated in the tabular material.

NEW NUCLEAR DATA

$_0n_1^1$	τ 13^m β^- 0.782 sl pβ^- coincidences	J. M. Robson, Phys. Rev. 83, 349(1951). F-K plot linear.
H	σ_t(14 Mev) 0.68	L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(14.2 Mev) 0.68	D. I. Meyer and W. Nyer, LA-1279 (July 1951).
	σ_t(14.1 Mev) 0.689	H. L. Poss et al., BNL-117 (June 1951).
	σ_t(156 Mev) 0.046	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_1H_0^1$	μ 1.52101 ± 0.00002 $\times 10^{-3}$(eh/4πmc)	J. H. Gardner, Phys. Rev. 83, 996(1951). Diamag. corr.
$_1H_1^2$	σ_t(14.2 Mev) 0.81	D. I. Meyer and W. Nyer, LA-1279 (July 1951).
	σ_t(156 Mev) 0.0707	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
	μ 0.857615* I 0.857611** *ν_D/ν_H = 0.15350733 ± 0.00000007 **ν_D/ν_H = 0.15350669 ± 0.00000012	G. Lindström, Arkiv Fysik 4, 1(1951). *D_2O; paraffin oil **D_2O; H_2O.
	μ 0.857608 I ν(D)/ν(H) = 0.15350612 ± 0.00000005	B. Smaller et al., Phys. Rev. 83, 812 (1951). [D_2;H_2].
$_1H_2^3$	τ 12.4^y	W. M. Jones, Phys. Rev. 83, 537(1951).
	β^- 0.0194 ± 0.0004 Neutrino mass ≤250 ev	D. R. Hamilton et al. Phys. Rev. 83, 215A (1951).
	β^- intensity below 1 kev less than expected	G. M. Insch, S. C. Curran, Phil. Mag. 42, 892(1951).
$_1H_2^4$	No β's after H^3(3.8 Mev d) Yield H^3(d,n)/H^3(d,p) >1500 E_d = 0.5 to 3.8	K. G. McNeill and W. Rall, Phys. Rev. 83, 1244(1951).
He	σ_s coh 1.1	A. W. McReynolds, Phys. Rev. 84, 969 (1951). Assuming σ_s coh(O) = 4.2
$_2He_2^4$	No large resonance in H^3(p,γ) for E_p < 3.4 scin	C. E. Falk, G. C. Phillips, Phys. Rev. 83, 468(1951).
	H^3(p,γ) γ 20.4 ± 0.2 s	R. S. Rochlin, Phys. Rev. 84, 165(1951).
Li	σ_t(1.3 – 3.4 Mev) graph σ_t(0.15 – 0.40 Mev) graph	C. K. Bockelman et al., Phys. Rev. 84, 69(1951). P. H. Stelson, W. M. Preston, Phys. Rev. 84, 162(1951).
$_3Li_3^6$	Level Be(p,α) 2.187 EA	C. P. Browne et al., Phys. Rev. 83, 179 (1951).
$_3Li_4^7$	μ 3.2568 σ I ν(Li)/ν(H) = 0.3886341 ± 0.0000010	G. Lindström, Arkiv Fysik 4, 1(1951). [$LiNO_3$].
	p(θ) ppl Li^6(d,p) I(0.477 level) = ½	D. N. Dunbar, F. Hirst, Phys. Rev. 83, 164(1951).
	Li^6(d,pγ) pγ(θ) indicates I = ½ for 0.477 level	J. O. Newton, Proc. Phys. Soc. (London) 64A, 938(1951). C. M. Class and S. S. Hanna, Nature 168, 429(1951).
	Level Li(d,d) 0.48	F. B. Shull, Phys. Rev. 83, 875A(1951).
	Levels 0.4782 Li^7(p,p) 0.4775 Li^7(d,d)	R. M. Williamson et al., Phys. Rev. 84, 731 (1951).
	Level Be^9(d,α) 4.62	R. W. Gelinas et al., Phys. Rev. 83, 1260(1951).
	No 4.8 γ Li(p,p) scin	H. E. Gove, Phys. Rev. 84, 1059(1951).
$_3Li_5^8$	τ 0.825^s Li(4 Mev d,p) scin	W. Rall and K. G. McNeill, Phys. Rev. 83, 1244(1951).
	β^- ~2% <13 a$\beta\gamma$ to 4.8 level of Be^8?	G. Vendryes, Compt. rend. 233, 391(1951).
	Level 2.2 Li^7(n,n) Γ = 0.040 J = 3	P. H. Stelson and W. M. Preston, Phys. Rev. 84, 162(1951).

$_3Li_8^9$	τ 0.168^s Delayed n's	W. L. Gardner et al., Phys. Rev. 83, 1054(1951). Be(19 Mev d,2p) and B,C,N(d and p).
Be	σ_t(1.3 – 3.4 Mev) graph	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
	σ_t(156 Mev) 0.26	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_4Be_3^7$	K(0.479 level)/ K(ground) = 0.123 from data of 49T6	J. M. Dickson and T. C. Randle, Proc. Phys. Soc. (London) 64A, 902(1951).
$_4Be_4^8$	τ $<5\times10^{-14s}$ $O^{16}(\gamma,4\alpha)$ stars	J. J. Wilkins and F. K. Goward, Proc. Phys. Soc. (London) A64, 849(1951).
	Pair emitting level ~ 7 B^{11}(7.9 p,α)	G. C. Phillips et al., Phys. Rev. 83, 1049(1951).
	Level 16.9 $C^{12}(\gamma,3\alpha)$ ppl	J. J. Wilkins, F. K. Goward, Proc. Phys. Soc. (London) 64A, 1056 (1951).
	Level 18.90? Li^7(p,n)Be^7	T. W. Bonner and J. W. Butler, Phys. Rev. 83, 1091(1951).
	$\alpha(\theta)$ found for E_d = 0.2 – 1 Li^6(d,α) ppl	D. N. Dunbar, F. Hirst, Phys. Rev. 83, 164(1951).
$_4Be_5^9$	I ½ I q ~0.02?	J. Hatton et al., Phys. Rev. 83, 672 (1951). $[Be_3Al_2Si_6O_{18}]$.
	$n(\theta)$ Be^9(d,n) I(ground) = (½)-	L. Schecter, Phys. Rev. 83, 695(1951).
	Level 2.63 $Be^9(\alpha,\alpha)$ a al	W. O. McMinn et al., Phys. Rev. 84, 963 (1951).
	Level 2.433 Be^9(p,p) EA	C. P. Browne et al., Phys. Rev. 83, 179 (1951).
$_4Be_6^{10}$	Level 3.34 Be^9(d,p) ppl	A. J. Salmon, Proc. Phys. Soc. (London) A64, 848(1951).
B	σ_a(th n) 730 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
	σ_t(0.9 – 3.4 Mev) graph	C. K. Bockelman et al., Phys. Rev. 84, 69(1951) See also B^{12}.
$_5B_5^{10}$	Level 0.71 C^{12}(d,α) s	A. Ashmore, J. F. Raffle, Proc. Phys. Soc. (London) 64A, 754 (1951).
	Levels 5.110, 5.163, 5.924 Be(d,n)	T. W. Bonner and J. W. Butler, Phys. Rev. 83, 1091(1951).
$_5B_5^{10}$	σ_t(0 – 3.4 Mev) graph Maxima: 1.8, 2.8	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
	$\sigma_{(n,\alpha)}$ E_n = 0.3 to 2.5 graphs	B. Petree et al., Phys. Rev. 83, 1148(1951).
	No 1.73 γ Be^9(d,n) sl;pe$^-$	D. E. Alburger, Phys. Rev. 83, 184(1951).
	n yield Be^9(d,n) increase at E_d = 0.91, 2.3? E_d = 0 – 3.5.	E. B. Tucker, Phys. Rev. 83, 473(1951).
$_5B_6^{11}$	μ 2.6887 I ν(B)/ν(H) = 0.3208381 ± 0.0000008	G. Lindström, Arkiv Fysik 4, 1(1951). $[Na_2B_2O_4]$ and $[K_2B_2O_4]$.
	γ's 4.43 7.34 6.75 8.93 B^{10}(d,p) pair s	S. J. Bame, L. M. Baggett, Phys. Rev. 84, 891(1951). E_d = 1.4.
	Levels B^{10}(d,p) pγ coincidences rates	H. H. Landon, Phys. Rev. 83, 1081(1951).
	Level 2 18 $Be^9(\alpha,d)$ a al	W. O. McMinn et al., Phys. Rev. 84, 963 (1951).
	Levels 4.50, 6.4* 6.7, 8.88 B^{10}(d,p) pair s	J. G. Rutherglen et al., Proc. Phys. Soc. (London) 64A, 906(1951). *In C^{11}?
$_5B_7^{12}$	τ 0.027^s	J. E. Brolley, Jr., et al., Phys. Rev. 83, 990(1951).
	β^- 4% ~9.1 a$\beta\gamma$	G. Vendryes, Compt. rend. 233, 391(1951).
	Levels 0.95, 1.65, 3.82 $Be^9(\alpha,p)$ a al	W. O. McMinn et al., Phys. Rev. 84, 963 (1951).
	$B^{11}(n,\gamma)$	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).

Levels	Γ(kev)	J
4.46	130	3
4.92	65	1
5.53	120	2
5.63	60	3

C	σ_t(1.3 – 3.4 Mev) graph	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
	σ_t(14 Mev) 1.14	L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(14.2 Mev) 1.29	D. I. Meyer and W. Nyer, LA-1279 (July 1951).
	σ_t(14.1 Mev) 1.279	H. L. Poss et al., BNL-117 (June 1951).
	σ_t(156 Mev) 0.330	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_6C_5^{11}$	τ 20.0^m	J. M. Dickson and T. C. Randle, Proc. Phys. Soc. (London) 64A, 902(1951).

$_6C_6^{12}$	γ 4.37 $\sim 2.5\gamma/4.4\gamma < 0.3$ $\sim 7\gamma/4.4\gamma < 0.002$	Be(α,n) pair s	K. P. Artemov, N. A. Viasov, Doklady Akad. Nauk S.S.S.R. 77, 225 (1951) in Guide to Russ. Sci. Per. Lit. 4, 235(1951).
	Level 4.44	B^{11}(d,n) pair s	J. G. Rutherglen et al., Proc. Phys. Soc. (London) 64A, 906(1951).
	n yield increase at E_d = 1.3 E_d = 0 – 3.5.	B^{11}(d,n)	E. B. Tucker, Phys. Rev. 83, 473(1951).
	$E_\delta \sim 27$	$C^{12}(\gamma,3\alpha)$ ppl	J. J. Wilkins, F. K. Goward, Proc. Phys. Soc. (London) 64A, 1056 (1951).
$_6C_7^{13}$	Level 3.05	C^{12}(d,p) pair s	L. M. Baggett and S. J. Bame, Jr., Phys. Rev. 84, 154(1951).
	Levels 3.683 ½ or 3/2,– 3.884 3/2 or 5/2,+	C^{12}(d,p)	J. Rotblat, Phys. Rev. 83, 1271(1951) d,p(θ); ppl. E_d = 8.
	Levels / Γ(kev) / J 6.80 / ≤11 / ≥3/2 7.60 / 120 / 3/2	C^{12}(n,γ)	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
$_6C_8^{14}$	Level 6.10	C^{13}(d,p) pair s	L. M. Baggett and S. J. Bame, Jr., Phys. Rev. 84, 154(1951).
N	σ_s coh 11		A. W. McReynolds, Phys. Rev. 84, 969 (1951). Assuming σ_s coh(O) = 4.2.
	σ_t(14.2 Mev) 1.39		D. I. Meyer and W. Nyer, LA-1279 (July 1951).
	σ_t(0.15 – 1.45 Mev) E_0 / Γ / J 0.640 / 40-55 kev / ½ 1.00 / 45-60 kev / 3/2		C. H. Johnson et al., Phys. Rev. 84, 775 (1951). Other resonances observed at 0.433, 1.12, 1.35, 1.45.
$_7N_6^{13}$	d,n(θ) I(3.53 level)=3/2+,5/2+ I(2.38 level)=½+ I(ground)=½-,3/2-	C^{12}(d,n)	F. A. El-Bedewi et al., Proc. Phys. Soc. (London) 64A, 1055 (1951).
	n(θ) I(ground) = ½- or 3/2-	C^{12}(d,n)	W. Heckrotte, L. Schecter, Phys. Rev. 83, 894A(1951).
	Resonances E_0 = 0.45, 1.700 ± 0.008	C^{12}(p,γ)	J. D. Seagrave, Phys. Rev. 83, 887A(1951); 84, 1219(1951).
$_7N_7^{14}$	Levels 3.40 5.04	C^{13}(d,n) pair s	L. M. Baggett and S. J. Bame, Jr., Phys. Rev. 84, 154(1951).
	Levels 3.95, 5.01, 5.70	O^{16}(d,α) s	A. Ashmore, J. F. Raffle, Proc. Phys. Soc., (London) 64A, 754 (1951).
$_7N_7^{14}$	Levels 3.98, 5.06	O^{16}(d,α) ppl	H. B. Burrows et al., Proc. Roy. Soc. (London) 209A, 478 (1951).
$_7N_8^{15}$	Levels 11.29, 11.43, 11.76, 11.88, 11.96, 12.10, 12.15, 12.33, 12.49	C^{14}(p,n)N^{14}	W. D. Roseborough et al., Phys. Rev. 83, 1133(1951).
O	σ_t(1.2 – 3.5 Mev) graph		C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
	σ_t(14 Mev) 1.49		L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(14.2 Mev) 1.61		D. I. Meyer and W. Nyer, LA-1279 (July 1951).
	σ_t(156 Mev) 0.430		A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_8O_9^{17}$	Levels 0.87 5.31 7.51 3.06 5.76 8.27 3.85 6.24 8.59 4.58 6.89 9.06 5.07	O^{16}(d,p) F^{19}(d,α) ppl	H. B. Burrows et al., Proc. Roy. Soc. (London) 209A, 478 (1951).
	Levels / Γ(kev) / J 5.69 / ≤7 / ≥½ 5.86 / ≤10 / ≥½ 5.93 / 30 / ½ 6.36 / 120 / ½	O^{16}(n,γ)	C. K. Bockelman et al., Phys. Rev. 84, 69(1951).
$_8F_8^{17}$	No γ		V. Perez-Mendez, P. Lindenfeld, Phys. Rev. 83, 864(1951).
	dn(θ) ppl I(0.536 level) = ½	O^{18}(d,n)	F. Ajzenberg, Phys. Rev. 83, 693 and 875A(1951).
	d,n(θ) I(0.53 level)=½+ I(ground)=3/2+,5/2+	O^{18}(d,n)	F. A. El-Bedewi et al., Proc. Phys. Soc. (London) 64A, 757 (1951).
	Levels / J 3.11 / $s_{1/2}$ 3.88 / $f_{7/2}$ 4.36 / $d_{3/2}$ 4.73 / $p_{3/2}$	O^{18}(p,p or γ)	R. A. Laubenstein et al., Phys. Rev. 84, 12, 18(1951).
$_8F_9^{18}$	β^- 100% 0.649 sl No γ		L. Ruby, J. R. Richardson, Phys. Rev. 83, 698(1951). F^{19}(p,pn).
	Levels 1.05 2.61 4.42 1.83 3.23 5.01 2.20 3.92 5.61	Ne^{20}(d,α) ppl	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) A64, 801(1951).
$_9F_{10}^{19}$	μ 2.6282* I 2.6284**		G. Lindström, Arkiv Fysik 4, 1(1951). *[$CHFCl_2$], **[$CFCl_3$]. Ratio different for six compounds tested.
	$\nu(F)/\nu(H)$ = 0.9408545* ± 0.0000030		
	$\nu(F)/\nu(H)$ = 0.9409330** ± 0.0000030		

$_{9}F^{18}_{10}$	μ 2.62807 I		T. Kanda et al., Phys. Rev. 83, 1066(1951).
	Levels 1.36, 2.67, 3.92	$O^{16}(\alpha,p)$ a al	M. L. Bullock, M. B. Sampson, Phys. Rev. 84, 967(1951).
	Level 1.52	F^{19}(d,d)	F. B. Shull, Phys. Rev. 83, 875A(1951).
$_{9}F^{20}_{11}$	Level 0.57	$Ne^{22}(d,\alpha)$ ppl	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) A64, 801(1951).
	Levels 0.63 2.55 4.06 0.83 2.91 4.31 1.00 3.49 4.73 1.37	F^{19}(d,p) ppl	H. B. Burrows et al., Proc. Roy. Soc. (London) 209A, 478 (1951).
	Q's 4.55, 3.86, 3.57, 2.35, 1.85, 1.43, 0.81, 0.14	F^{19}(d,p)	F. B. Shull, Phys. Rev. 83, 875A(1951).
$_{10}Ne^{19}_{9}$	τ 18.5^{s} β^+ 2.16	sπ	G. E. Schrank, J. R. Richardson, Phys. Rev. 83, 891A(1951). F(p,n).
$_{10}Ne^{20}_{10}$	Resonances for $O^{16}(\pi)$ $F^{19}(p,\alpha)$ E_0 0.710, 0.842, 1.130, 1.236, 1.367 Γ(kev) 35, 24, 43, 58, 26		G. C. Phillips, N. P. Heydenburg, Phys. Rev. 83, 184(1951).
	n yield increase at E_d = 1.3 E_d = 0 – 3.5.	F^{19}(d,n)	E. B. Tucker, Phys. Rev. 83, 473(1951).
$_{10}Ne^{21}_{11}$	Levels 0.33 4.71 7.30 1.68 5.44 8.28 2.79 5.74 8.91 3.73 6.66*	Ne^{20}(d,p)	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) A64, 801(1951). *Isotopic assignment uncertain.
$_{10}Ne^{23}_{13}$	Q's 1.17, -0.04*	Ne^{22}(d,p)	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) A64, 801(1951). *Isotopic assignment uncertain.
$_{11}Na^{21}_{10}$	τ 22.8^{s} β^+ <2.50? 2.50 γ ~1.5	sπ scin	G. E. Schrank, J. R. Richardson, Phys. Rev. 83, 891A(1951). Mg(p,α).
$_{11}Na^{23}_{12}$	μ 2.2167 I ν(Na)/ν(H) = 0.2645182 ± 0.0000007		G. Lindström, Arkiv Fysik 4, 1(1951). [NaBr].
$_{11}Na^{24}_{13}$	γ 0.04% ~3.7 ic 4.1γ/disintegration <10^{-6}		L. E. Beghian et al., Phys. Rev. 83, 186 (1951).
	Levels 7 capture γ's	Na(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
Mg	σ_t(0.01 – 0.8 Mev) graph E_0 0.085, 0.275, 0.430 σ_0 23, 13, 13 J ½, ½, ½		R. E. Fields, M. Walt, Phys. Rev. 83, 479 (1951).
$_{12}Mg^{23}_{11}$	τ 12.3^{s} β^+ 2.99	scin	F. I. Boley, D. J. Zaffarano, Phys. Rev. 84, 1059(1951)
$_{12}Mg^{25}_{13}$	Level 0.584	Al(d,α) s	H. Enge et al., Phys. Rev. 83, 31(1951).
	Levels 11 capture γ's	Mg(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
$_{12}Mg^{26}_{14}$	Levels 5 capture γ's	Mg(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
Al	σ_t(14 Mev) 1.67 σ_t(156 Mev) 0.68		L. S. Goodman, ANL-4602 (Mar. 1951). A. E. Taylor et al., Phil. Mag. 42, 751(1951).
	σ_t graphs as function of temp(Al) and E_n		J. M. Cassels, Proc. Roy. Soc. (London) 208A, 527(1951).
$_{13}Al^{25}_{12}$	Levels 9 levels for E_p = 0.4 – 3.9	Mg^{24}(p,p) s,pc	F. P. Mooring et al., Phys. Rev. 83, 219A (1951).
	$Mg^{24}(p,2pn)Na^{22}$ yield curve, σ	$E_p \leq 92$	J. W. Meadows, R. B. Holt, Phys. Rev. 83, 1257(1951).
$_{13}Al^{26}_{13}$	$Mg^{25}(p,2p2n)Na^{22}$ yield curve, σ	$E_p \leq 92$	J. W. Meadows, R. B. Holt, Phys. Rev. 83, 1257(1951).
$_{13}Al^{27}_{14}$	μ 3.6394 I ν(Al)/ν(H) = 0.2605694 ± 0.0000010		G. Lindström, Arkiv Fysik 4, 1(1951). [$AlCl_3$].
	Levels 0.97 4.74 2.39 5.76 3.17	Al(d,d) s	K. K. Keller, Phys. Rev. 84, 884(1951). E_d = 10.4 Mev.
	$Mg^{26}(p,2p3n)Na^{22}$ yield curve, σ	$E_p \leq 92$	J. W. Meadows, R. B. Holt, Phys. Rev. 83, 1257(1951).
$_{13}Al^{28}_{15}$	β^- 2.84* sl γ 1.78 sl;pe$^-$		H. T. Motz, Phys. Rev. 83, 215A(1951) and *verbal report.
	Level 0.031	Al^{27}(d,p) s	H. Enge et al., Phys. Rev. 83, 31(1951).
	Al(d,p) γ of 0.031	pc,a,scin	R. D. Smith, R. A. Anderson, Nature 168, 429(1951).
	Levels 1.04 3.98 6.40 1.58 4.83 6.90 2.17 5.16 7.40 2.52 5.80 8.50 3.47 6.10	Al(d,p) s	K. K. Keller, Phys. Rev. 84, 884(1951). E_d = 10.4 Mev.

$_{13}Al^{28}_{15}$	Levels 29 capture γ's	Al(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
Si	σ_i(0.01 – 0.8 Mev)	graph	R. E. Fields, M. Walt, Phys. Rev. 83, 479 (1951).
	E_0 0.195; 0.570 — σ_0 12; 8 — J ½; >½		
$_{14}Si^{27}_{13}$	τ 5.4^s		F. I. Boley, D. J. Zaffarano, Phys. Rev. 84, 1059(1951).
	β^+ 3.48	scin	
$_{14}Si^{28}_{14}$	n(θ)	Al(d,n)	L. Schecter, Phys. Rev. 83, 695(1951). *Spin of Si^{28} excited.
	J* 2 or 3+		
	Levels 7.6, 10.46 | 12.12	Al^{27}(p,γ) pair s	J. G. Ruthergien et al., Proc. Phys. Soc. (London) 64A, 906(1951).
	Al(p;p,α,γ) yield curves	E_p = 1.4-4	F. C. Shoemaker et al., Phys. Rev. 83, 1011(1951).
$_{14}Si^{29}_{15}$	μ −0.55492* assumed I=½	I	S. S. Dharmatti, H. E. Weaver, Jr., Phys. Rev. 84, 843(1951). * Based on $\mu(H^1)$ = 2.7934; $\nu(H^2)/\nu(H^1)$ = 0.153506; $\nu(Na^{23})/\nu(H^1)$ = 0.26450.
	Levels 8 capture γ's	Si(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
$_{14}Si^{29*}_{15}$	μ 0.55 assuming I = ½	I	J. Hatton et al., Phys. Rev. 83, 672(1951). [$Be_3Al_2Si_6O_{18}$].
$_{14}Si^{30}_{16}$	Levels 7 capture γ's	Si(n,γ) pair s	B. B. Kinsey et al., Phys. Rev. 83, 519 (1951).
	Levels 2.3, 3.6, 4.9	Al(α,p) from pγ	H. H. Landon, Phys. Rev. 83, 1081(1951).
$_{15}P^{32}_{17}$	Continuous γ spectrum $\gamma(E_\gamma > 0.09)/\beta^- = 0.0024$		L. Madansky, F. Rasetti, Phys. Rev. 83, 187(1951).
$_{15}P^{33}_{18}$	τ 25^d		R. K. Sheline et al., Phys. Rev. 83, 919(1951). S,Cl(≤48 Mev γ)
	β^- 0.26	a,sl	
	(0.5 Mev γ)/β <0.07		
$_{16}S^{31}_{15}$	τ 3.2^s		D. J. Zaffarano, F. I. Boley, Phys. Rev. 83, 223(A)(1951) and 84, 1059(1951).
	β^+ 4.06	scin	
$_{16}S^{33}_{17}$	μ 0.64290	I	S. S. Dharmatti, H. E. Weaver, Phys. Rev. 83, 845(1951). [CS_2].
	$\nu(S^{33})/\nu(N^{14})$ = 1.06174 ± 0.00014		
$_{16}S^{35}_{19}$	β^- 0.167	sl	R. B. Heller et al., Phys. Rev. 83, 848 (1951).
	F-K plot linear to 0.032		
$_{17}Cl^{33}_{16}$	τ 1.8^s		D. J. Zaffarano, F. I. Boley, Phys. Rev. 83, 223(A)(1951) and 84, 1059(1951).
	β^+ 4.43	scin	
$_{17}Cl^{34}_{17}$	γ 1.16; 2.10; 3.22	scin	H. K. Ticho, Phys. Rev. 84, 847(1951). Cl(18 Mev p,pn).
$_{17}Cl^{35}_{18}$	q coupling ratio Cl^{35}/Cl^{37} 1.268 [p-$C_6H_4Cl_2$]		M. Buyle-Bodin and D. Dautreppe, Compt. rend. 233, 1101(1951).
	$q(Cl^{35})/q(Cl^{37})$ = 1.2688		H. G. Dehmelt and H. Krüger, Z. Physik 129, 401(1951).
	q coupling ratio Cl^{35}/Cl^{37} = 1.2686 M ± 0.0004; $\mu(Cl^{35})/\mu(Cl^{37})$ = 1.20136 ± 0.00005		V. Jaccarino, J. G. King, Phys. Rev. 83, 471(1951)
$_{17}Cl^{36}_{19}$	I 2	Mic	C. M. Johnson, W. Gordy, Phys. Rev. 83, 1249(1951).
	q −0.0168	Mic	
$_{17}Cl^{36*}_{19}$	Cl(th n,γ) E_γ = 5.5, 6.2 Other peaks	scin	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663(1951).
A	σ_s coh 0.5		A. W. McReynolds, Phys. Rev. 84, 969 (1951). Assuming σ_s coh(O) = 4.2.
$_{18}A^{36}_{18}$	Cl^{35}(p,γ) yield curve		K. J. Brostrøm et al., Phys. Rev. 83, 1265(1951).
$_{18}A^{38}_{20}$	Cl^{37}(p;γ,n,α) yield curves		K. J. Brostrøm et al., Phys. Rev. 83, 1265(1951).
$_{18}A^{39?}_{21}$	τ 2.4^m		M. Hoffman, Phys. Rev. 83, 215A(1951).
$_{18}A^{42}_{24}$	τ >200^d p 12.4^{h}K		S. Katcoff, BNL-117 (June 1951). A(n).
$_{19}K^{37}_{18}$	τ 1.2^s		F. I. Boley, D. J. Zaffarano, Phys. Rev. 84, 1059(1951).
	β^+ 4.57	scin	
$_{19}K^{38}_{19}$	τ 7.7^m		D. Green, J. R. Richardson, Phys. Rev. 83, 891A(1951). K(18 Mev p).
	β^+ 2.8	s	
	γ		
	γ 2.16	scin	H. K. Ticho, Phys. Rev. 84, 847(1951). K(18 Mev p,pn).
$_{19}K^{40}_{21}$	β^- 1.28	scin	M. L. Good, Phys. Rev. 83, 1054(1951).
	ΔI = 4, yes shape β's/sec(gm of K) = 27.1		
	γ(Auger e$^-$) coincidences		M. Paganelli, G. Quareni, Nuovo cimento 8, 598(1951).

$_{19}K^{42}_{23}$	$\beta\gamma(\theta)$ indicates I = 2+ for 1.51 level of Ca^{42} b = −0.055 for E_β = 1.23		D. T. Stevenson, M. Deutsch, Phys. Rev. 84, 1071(1951).
$_{20}Ca^{39}_{19}$	τ 1.1^s β^+ 5.13	scin	F. I. Boley, D. J. Zaffarano, Phys. Rev. 84, 1059(1951); 83, 223A(1951).
Ti	σ_t(14 Mev) 2.25		L. S. Goodman, ANL-4602 (Mar. 1951).
$_{22}Ti^{51}_{29}$	γ 0.32	scin	E. der Mateosian, Phys. Rev. 83, 223A (1951).
V	$\sigma_s$coh 0.028 (+)	mir	A. W. McReynolds, R. J. Weiss, Phys. Rev. 83, 171(1951).
	σ_s(0.0017 ev) 6 σ_t(0.0017 ev) 4.7		P. A. Egelstaff, Nature 168, 290(1951).
	σ_t(14 Mev) 2.38		L. S. Goodman, ANL-4602 (Mar. 1951).
	Resonance E_0 ~3300 ev		S. P. Harris, Phys. Rev. 83, 235A(1951).
$_{23}V^{51}_{28}$	I ½	para	B. Bleaney et al., Proc. Phys. Soc. (London) 64A, 601(1951).
Cr	σ_t(14 Mev) 2.33		L. S. Goodman, ANL-4602 (Mar. 1951).
Mn	σ_t (0.08 − 1.0 Mev) graph		W. F. Stubbins, Phys. Rev. 84, 902(1951).
$_{25}Mn^{56}_{31}$	Mn(th n,γ) E_γ = 5.0, 7.2 No line at 2.2	scin	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663(1951).
	Mn(n,γ) E_γ = 5.32, 7.16	scin	R. W. Pringle, G. Isford, Phys. Rev. 83, 467(1951).
Fe	σ_s(0.0017 ev) 1.5 σ_t(0.0017 ev) 1.4		P. A. Egelstaff, Nature 168, 290(1951).
	σ_t(0.003 ev) 7.8 σ_{coh}(0.003 ev) 6.0		W. W. Havens, Jr., and L. J. Rainwater, Phys. Rev. 83, 1123(1951).
	σ_t(14 Mev) 2.33		L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(156 Mev) 1.24		A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_{26}Fe^{52}_{26}$	β^+ ~0.64 K/β^+ ~1.6 p ≥ 95% 21^mMn	a No γ	G. Friedlander and J. M. Miller, Phys. Rev. 84, 588(1951).
$_{26}Fe^{53}_{27}$	β^+ 2.6* F-K plot linear*	scin	F. L. Boley, L. J. Laslett, Phys. Rev. 83, 215A(1951) and *verbal report.
$_{26}Fe^{53}_{29}$	τ 3.0^y	pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
$_{26}Fe^{55}_{29}$	E_{dis} 0.21 From continuous γ endpoint	scin	D. Maeder and P. Preiswerk, Phys. Rev. 84, 595(1951).
$_{26}Fe^{57}_{31}$	Fe(th n,γ) E_γ = 6.0, 7.4, 8.6(Fe^{58}?) No line at 1.4.	scin	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663(1951).
$_{26}Fe^{59}_{33}$	τ 45.1^d	pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
	τ 47.1 ± 0.5^d		J. Tobailen, Compt. rend. 233, 1360(1951). Differential ic's.
	β^- 0.45 γ ~50% 1.10 ~50% 1.29 No 0.26 β, no $\gamma\gamma$	sl sl,pe$^-$	K. C. Mann, G. H. Hanson, Phys. Rev. 83, 893A(1951). Fe(n,γ).
Co	σ_t(0.08 − 1.0 Mev) graph		W. F. Stubbins, Phys. Rev. 84, 902(1951).
	Resonance E_0 ~3600* ev		S. P. Harris, Phys. Rev. 83, 235A(1951) and *verbal report.
	Resonances (ev) E_0: 126, 5000; σ_0: 9100*; Γ: 5.0* *Assuming $\Gamma_n \gg \Gamma_\gamma$.		W. W. Havens, Jr., and L. J. Rainwater, Phys. Rev. 83, 1123(1951).
$_{27}Co^{55}_{28}$	$\beta\gamma(\theta)$ = const.		D. T. Stevenson and M. Deutsch, Phys. Rev. 83, 1202(1951).
$_{27}Co^{56}_{29}$	$\beta\gamma(\theta)$ = const.		D. T. Stevenson and M. Deutsch, Phys. Rev. 83, 1202(1951).
$_{27}Co^{59}_{32}$	I ½	para	B. Bleaney, D. J. E. Ingram, Proc. Roy. Soc. A208, 143(1951).
$_{27}Co^{60}_{33}$ 10.7^m	β_1 0.28% (1.56) β_2 <10^{-4}% (2.9)		M. Deutsch, G. Scharff-Goldhaber, Phys. Rev. 83, 1059(1951).
$_{27}Co^{60}_{33}$ 5.2^y	τ 5.27 ± 0.07^y		J. Tobailen, Compt. rend. 233, 1360(1951). Differential ic's
$_{27}Co^{61}_{34}$	τ 99.0^m β^- 45% 1.00 55% 1.42 γ ~0.5	a	L. A. Smith et al., Phys. Rev. 84, 842(1951); 83, 886A(1951). Cu(γ,a); Ni(γ,p); chem.
Ni	σ_t(14 Mev) 2.41		L. S. Goodman, ANL-4602 (Mar. 1951).
$_{28}Ni^{57}_{29}$	β^+ 0.835 γ 0.123 1.4* 1.375 0.2* 1.91	sl ce$^-$,pe$^-$ pe$^-$ pe$^-$	R. Canada, A. C. G. Mitchell, Phys. Rev. 83, 955(1951). Fe(α,n); chem. *Relative to annihil. γ.
$_{28}Ni^{65}_{37}$	$\gamma\gamma(\theta)$ indicates dipole-quadrupole transitions		T. Wiedling, A. Carlsson, Phys. Rev. 83, 181(1951).
Cu	σ_a(th n) 3.57	osc	H. Pomerance, Phys. Rev. 83, 641(1951).

Cu	σ_t(14 Mev) 2.5	L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(14.2 Mev) 2.85	D. I. Meyer, W. Nyer, LA-1279 (July 1951).
	σ_t(156 Mev) 1.38	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_{29}Cu^{63}_{34}$	n(θ) Cu^{63}(d,n) I(ground) = $\frac{3}{2}$ + ?	L. Schecter, Phys. Rev. 83, 695(1951).
	q −0.13 para $q(Cu^{63})/q(Cu^{65})$ = 1.08	B. Bleaney et al., Proc. Phys. Soc. (London) 64A, 758(1951).
$_{29}Cu^{64}_{35}$	τ 12.74^h pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
	K Auger e^-/β^+ = 1.2	E. Plassman and F. R. Scott, Phys. Rev. 84, 156(1951).
$_{29}Cu^{65}_{36}$	q −0.12 para	B. Bleaney et al., Proc. Phys. Soc. (London) 64A, 758(1951).
$_{29}Cu^{66}_{37}$	τ 5.2^m β^- 9% 1.59 sl 91% 2.63 γ 1.04 sl;ce$^-$ $\alpha < 3 \times 10^{-3}$	G. Friedlander and D. E. Alburger, Phys. Rev. 84, 231(1951). Cu(pile n,γ).
	τ 5.17 ± 0.07^m β^- 5.5% 1.6 scin;$\beta\gamma$ 94.5% 2.7 scin γ 1.05 scin $\beta\gamma$ delay < 5×10^{-9}s	H. Roderick et al., Phys. Rev. 84, 887 (1951). Cu(slow n,γ).
	τ 5.12^m pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
Zn	σ_t(14 Mev) 2.88	L. S. Goodman, ANL-4602 (Mar. 1951).
	Resonances (ev) E_0 $\sigma_0\Gamma^2$ 520 6.9×10^4 1100 2.3×10^4 3800 2.5×10^5	W. W. Havens, Jr., and L. J. Rainwater, Phys. Rev. 83, 1123(1951).
$_{30}Zn^{65}_{35}$	Xγ show 44 ± 3% of K's go to 1.11 level	S. E. Furberg, Nature 168, 1005(1951).
	K/β^+ 25 ± 10 cc for ground transition	J. K. Major, Compt. rend. 233, 947(1951).
$_{31}Ga^{67}_{36}$	τ 77.9 ± 0.3^h	J. Tobailen, Compt. rend. 233, 1360(1951). Differential ic's.
$_{32}Ge^{69}_{37}$	β^+ 2% 0.220 sl 10% 0.610 88% 1.215 γ 0.090 sl;pe$^-$ 0.388 1.120* 0.576* 1.340 0.870* 1.610 (1.215β)γ coincidences	C. M. Huddleston and A. B. Smith, Phys. Rev. 84, 289(1951). Ga(d,2n). *Relative intensities 44, 29, 100.
$_{33}As^{75}_{42}$	μ 1.4351 I [Based on $\mu(H^1)$ = 2.7934]	S. S. Dharmatti and H. E. Weaver, Jr., Phys. Rev. 84, 367(1951).
$_{33}As^{76}_{43}$	γ 100* 0.555 9.5 0.648 sl; 25 1.210 pe$^-$, 1.6 1.410 Cpt 5 2.06	P. Hubert, J. phys. radium 12, 823(1951). *Relative intensities of γ's from pe$^-$.
Se	σ_s(0.0017 ev) 2 σ_t(0.0017 ev) 4	P. A. Egelstaff, Nature 168, 290(1951).
$_{34}Se^{73}_{39}$	τ 7.08^h β^+ 1.1% 0.250 sa 10.3% 0.750 87.4% 1.318 1.2% 1.680 γ 0.0671 ce$^-$,pe$^-$ K/L = 7.6 0.361 ce$^-$,pe$^-$ K/L = 8.6 0.860 pe$^-$ 1.310 Cpt	F. R. Scott, Phys. Rev. 84, 659(1951).
Br	Resonances (ev) E_0 σ_0 Γ 35.7 9000* 0.15* 54 6000* 0.15* 104 4700** 0.24** 136 4800* 0.45*	W. W. Havens, Jr., and L. J. Rainwater, Phys. Rev. 83, 1123(1951). *Assuming $\Gamma_n \approx \Gamma_\gamma$. **Assuming $\Gamma_n \approx 3\Gamma_\gamma$.
$_{35}Br^{74?}_{39}$	τ 35^m long-lived or stable daughter	J. M. Hollander, UCRL-1396 (July 1951). Cu(C,3n); chem.
$_{35}Br^{75?}_{40}$	τ 95^m β^+ ~1.8 a	J. M. Hollander, UCRL-1396 (July 1951). Cu(C,2n); chem.
$_{35}Br^{76}_{41}$	τ 17^h β^+ 2.2, 3.2 a γ 0.6?, 1.4 a X/β^+ = 0.7	S. C. Fultz, M. L. Pool, Phys. Rev. 83, 875A(1951). Se^{76}(8.3 Mev p,n); chem.
	τ 16.5^h β^+ 3.5 s	J. M. Hollander, UCRL-1396 (July 1951). As(33 Mev α,3n); chem.
$_{35}Br^{77}_{42}$	β^+ 0.336 sa γ 0.64* 0.160 ce$^-$,pe$^-$ 20 0.237 ce$^-$,pe$^-$ 0.22 0.284 pe$^-$ 0.25 0.298 pe$^-$ 100 0.520 ce$^-$,pe$^-$ 8.6 0.641 pe$^-$ 25 0.813 pe$^-$	R. Canada, A. C. G. Mitchell, Phys. Rev. 83, 955(1951). As(α,2n). *Relative intensities from pe$^-$'s.
	τ 57^h β^+ 0.4 s e$^-$ 0.35 s γ ~0.3,~0.8	J. M. Hollander, UCRL-1396 (July 1951). As(24 Mev α,2n); chem.
$_{35}Br^{79}_{44}$	$q(Br^{79})/q(Br^{81})$ = 1.1970	H. G. Dehmelt and H. Krüger, Z. Physik 129, 401(1951).

$_{35}Br^{79}_{44}$	q	+0.30	I	H. G. Dehmelt, Z. Physik 130, 480(1951).
	q	+0.31	Mic	W. Gordy, J. Chem. Phys. 19, 792(1951).
$_{35}Br^{81}_{46}$	q	+0.25	I	H. G. Dehmelt, Z. Physik 130, 480(1951).
	q	+0.26	Mic	W. Gordy, J. Chem. Phys. 19, 792(1951).
Rb	No measurable amount of Kr found in old Rb ores. K/β^- <1/40,000.			E. K. Gerling and N. V. Baranovskaya, Doklady Akad. Nauk S.S.S.R. 76, 825(1951), in Guide to Russ. Sci. Period. Lit. 4, 203(1951).
$_{37}Rb^{86}_{49}$ 19.5^d	I	2	M	E. H. Bellamy, Nature 168, 556(1951).
	μ	(−?)1.68	M	
$_{37}Rb^{86}_{49}$	τ	1.06^m		A. Flammersfeld, Z. Naturforsch. 6a, 559(1951). Rb (slow and fast n).
	γ	0.78		
	K x-rays?			
$_{37}Rb^{87}_{50}$	τ	$(7.6 \pm 0.4) \times 10^{10}$y		G. Charpak, F. Suzor, Compt. rend. 233, 1356(1951).
	τ	6.2×10^{10}y		S. C. Curran et al., Phys. Rev. 84, 151(1951); Phil. Mag. 42, 82(1952).
	β^-	0.275	pc	
	No ce$^-$ or x-rays			
$_{37}Rb^{88}_{51}$	β^- ~65%	5.2	a	K. Geiger, Ann. Physik 9, 293(1951). No ($5.2\beta^-,\gamma$). $\beta\gamma$, $\gamma\gamma$. *Relative intensities.
	~16%	3.6	a$\beta\gamma$	
	~19%	1.8	a$\beta\gamma$	
	γ 1*	3.0	a;pe$^-$	
	10*	1.7		
Sr	No X-ray resonance absorption, ~30 − 100 kev			R. H. McFarland, Phys. Rev. 83, 666 (1951).
$_{38}Sr^{87}_{49}$ 2.75^h	τ	2.80^h		L. G. Mann and P. Axel, Phys. Rev. 84, 221(1951). d 80^{h}Y.
	γ	0.390	sl;ce$^-$	
	α_K = 0.28 K/L + M = 6.9			
	e$^-$X coincidences only			
$_{39}Y^{87}_{48}$ 80^h	τ	80.0^h		L. G. Mann and P. Axel, Phys. Rev. 84, 221(1951). Sr(10 Mev d,n); chem.
	β^+ 0.3%	~0.7	sl	
	γ	0.485	sl;ce$^-$	
		α_K = 0.0032		
	γX coincidences			
$_{39}Y^{87}_{48}$ 14^h	τ	14^h		L. G. Mann and P. Axel, Phys. Rev. 84, 221(1951). Sr(10 Mev d,n); chem.
	γ	0.384	sl;ce$^-$	
		α_K = 0.24		
	e$^-$X coincidences			
	No γ's with $E_\gamma > 1$			
$_{39}Y^{90}_{50}$	$\tau_{\frac{1}{2}}$	14^s		M. Goldhaber et al., Phys. Rev. 83, 661 (1951). Y(fast n); d 80^{h}Zr; chem.
	γ	0.92	scin	
	α = 0.01		M4	
	$\tau_{\frac{1}{2}}$	13^s		F. J. Shore et al., Phys. Rev. 83, 688 (1951).
	γ 0.913	sπ; ce$^-$,scin		
	d 80^{h}Zr			
Zr	σ_a(th n)	0.18	osc	H. Pomerance, Phys. Rev. 83, 641(1951).
$_{40}Zr^{89}_{49}$ 4.5^m	$\tau_{\frac{1}{2}}$	4.4^m		F. J. Shore et al., Phys. Rev. 83, 688 (1951). *Relative intensities.
	β^+ 0.36%*	~2.5	sπ	
	γ 100%*	0.588	ce$^-$ scin	
	α_K ~0.06 K/L + M ~7			
$_{40}Zr^{89}_{49}$ 80.1^h	β^+	0.890	sπ	F. J. Shore et al., Phys. Rev. 83, 688 (1951).
	p 13^{s}Y			
	K, β^+ to 14^{s}Y daughter			M. Goldhaber et al., Phys. Rev. 83, 661 (1951).
	K/β^+ ~3			
	0.92 γ in 14^{s}Y			
	No other γ's		s,scin,pc	
$_{41}Nb^{90}_{49}$	γ	0.14	scin	G. E. Boyd, ORNL-1053 (Mar. 1951). Mo(d,α).
		1.14		
		2.23		
$_{41}Nb^{92}_{51}$	γ weak	0.20	scin	G. E. Boyd, ORNL-1053 (Mar. 1951). Mo(d,α).
		0.91		
		follows K		
$_{41}Nb^{94}_{53}$ 6.6^m	γ	0.9	scin	E. der Mateosian, Phys. Rev. 83, 223A (1951).
Mo	σ_s(0.0017 ev)	<0.3		P. A. Egelstaff, Nature 168, 290(1951).
	σ_t(0.0017 ev)	<0.3		
	σ_t(0.01 − 1.23 Mev) graph			W. F. Stubbins, Phys. Rev. 84, 902(1951).
	σ_t(14 Mev)	3.6		L. S. Goodman, ANL-4602 (Mar. 1951).
$_{42}Mo^{91}_{49}$	Mo(γ,n) threshold (15.5^m) = 13.2 threshold (75^s) = 13.1			R. Montalbetti L. Katz, Phys. Rev. 83, 892A(1951).
$_{42}Mo^{93}_{51}$ 6.75^h	γ	0.262	sl;ce$^-$	L. Ruby, J. R. Richardson, Phys. Rev. 83, 698(1951). Nb(p,n). *E5.
		K/L* = 2.9		
		0.687	sl;pe$^-$	
		0.692	ce$^-$	
		1.51	pe$^-$	
$_{42}Mo^{99}_{57}$	β^-	1.25	sπ	N. Marty-Wollman, Ann. Phys., 6, 662(1951). *Relative intensities of photons from pe$^-$. See also Tc^{99}.
	γ ~20*	0.139	sπ;	
	~10	0.745	pe$^-$	
	~5	0.780	Cpt	
	~3	0.850		
$_{42}Mo^{101}_{59}$ 14.6^m	γ	0.150	scin	E. der Mateosian, Phys. Rev. 83, 223A (1951).
$_{43}Tc^{93}_{50}$	β^+	0.800	sl	G. E. Boyd, B. H. Ketelle, Phys. Rev. 83, 216A(1951).
	γ	1.32	scin	
	(1.32γ)β^+ coincidences			
$_{43}Tc^{96}_{52}$ 62^d	γ	0.202*	scin	G. E. Boyd, B. H. Ketelle, Phys. Rev. 83, 216A(1951) and *verbal report.
		0.578*		
		0.804*		
		1.028*		
$_{43}Tc^{95}_{52}$ 20.0^h	γ	0.76	scin	G. E. Boyd and B. H. Ketelle, ORNL-1053 (Mar. 1951). Mo(d).
		1.07		
	0.93 γ not found			
$_{43}Tc^{96}_{56}$ 5.9^h	γ	0.139	sπ;ce$^-$	N. Marty-Wollman, Ann. Phys., 6, 662(1951).
	K/L ~ 10			

$_{43}Tc^{101}_{58}$	β^- 1.20 sl γ st 0.300* scin w 0.556* w 0.734* w 0.856?* $(1.20\beta^-)(0.30\gamma)$	G. E. Boyd, B. H. Ketelle, Phys. Rev. 83, 216A(1951) and *verbal report.
	γ 0.260 scin	E. der Mateosian, Phys. Rev. 83, 223A (1951).
$_{46}Pd^{109}_{59}$	I $\frac{5}{2}$ J μ −0.6 S	P. Brix, A. Steudel, Naturwissenschaften 38, 431(1951).
Ag	No X-ray resonance absorption, 80 – 100 kev	R. H. McFarland, Phys. Rev. 83, 666 (1951).
$_{47}Ag^{106}_{59}$ 24.5^m	τ 24.0^m β^+ 29% 1.5 sπ 71% 1.94 β^-(?) 2% 0.4 ce$^-$ weak 0.5 γ's >0.6 scin,a	W. L. Bendel et al., Phys. Rev. 83, 677 (1951). Ag(γ,n).
Cd	σ_s/σ_a graph E_n = 0.02 – 0.4 ev $\Gamma_n/\Gamma(E_0 = 0.176)$ = 0.0051	B. N. Brockhouse et al., Phys. Rev. 83, 840(1951).
$_{48}Cd^{111}_{63}$ 48.7^m	γ (0.149) scin α_K = 1.5 E3	A. W. Sunyar, Phys. Rev. 83, 864(1951).
$_{49}In^{111}_{62}$	(0.172γ)(0.247γ) ~0.1$^{\mu s}$ delay	M. M. Miller et al., Phys. Rev. 84, 849 (1951).
	μ(0.247 level) $\gamma\gamma(\theta)$ −0.85	H. Aeppli et al., Phys. Rev. 84, 370(1951).
$_{49}In^{113}_{64}$ 1.73^h	γ 0.3933 sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 84, 596(1951).
$_{49}In^{114}_{65}$ 50^d	γ (0.192) s,ce$^-$ α_K = 2.4* K/L = 1.1 $\gamma\gamma(\theta)$ indicates I = 4,2,0	R. M. Steffen, Phys. Rev. 83, 166(1951). *E4.
Sn	σ_t(14 Mev) 4.02	L. S. Goodman, ANL-4602 (Mar. 1951).
$_{50}Sn^{113}_{63}$ 112^d	τ 118^d γ 0.2552 sπ;ce$^-$ 0.4009	J. M. Cork et al., Phys. Rev. 84, 596(1951). Sn^{112}(pile n).
$_{50}Sn^{117}_{67}$ 14.5^d	τ 14.0^d γ 0.1559 sπ;ce$^-$ K/L ~ 7 0.1594	J. M. Cork et al., Phys. Rev. 84, 596(1951). Sn^{116}(pile n).
$_{50}Sn^{119}_{69}$ ≥100^d	γ 0.0238 pc α = 7	J. C. Bowe, P. Axel, Phys. Rev. 84, 939 (1951).
	γ 0.02 scin	G. Scharff-Goldhaber et al., Phys. Rev. 83, 480(1951).
	γ 0.0242 sπ;ce$^-$ L/M ~ 4 0.0653 K/L = 0.51*, L/M ~ 4	R. D. Hill, Phys. Rev. 83, 865(1951). $Sn^{118}(n,\gamma)$. *M4.
$_{50}Sn^{123}_{73}$ 130^d	τ 125^d No 0.394γ sπ	J. M. Cork et al., Phys. Rev. 84, 596(1951).
$_{50}Sn^{127}_{77}$	τ 1.5^h p 93^{h}Sb, 9.3^{h}Te	J. W. Barnes and A. J. Freedman, Phys. Rev. 84, 365(1951). Fission.
Sb	σ_t(14 Mev) 4.6	L. S. Goodman, ANL-4602 (Mar. 1951).
$_{51}Sb^{121}_{70}$	q coupling ratio Sb^{123}/Sb^{121}=1.2751 I	H. G. Dehmelt, H. Krüger, Z. Physik 130, 385(1951).
$_{51}Sb^{124}_{73}$ 60^d	$\beta\gamma(\theta)$ suggests I = 1, 1, 0 or 3, 2, 0 for 2.29β, 0.607γ, b(E_β) curves	E. K. Darby, W. Opechowski, Phys. Rev. 83, 887A and 676(1951). D. T. Stevenson and M. Deutsch, Phys. Rev. 83, 1202(1951).
$_{51}Sb^{126}_{75}$	τ 9^h β^- 1 a γ 0.4 a,scin 0.90 $\beta\gamma\gamma$ coincidences	J. W. Barnes and A. J. Freedman, Phys. Rev. 84, 365(1951). Fission. Assignment from yield.
Te	σ_s incoh 0.6 σ_t (0.06 – 400 ev) graph E_0? 0.9,1.1,1.2,1.4,1.7 ev E_0 2.2 ev $\sigma_0\Gamma^2$ = 900 assigned to Te^{123}	C. Heindl, I. W. Ruderman, Phys. Rev. 83, 660(1951).
$_{52}Te^{121}_{69}$ 143^d 17^d	τ 140^d γ 0.0818 sπ;ce$^-$ 0.2136 γ 0.575 sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 84, 596(1951). Te^{120}(pile n).
$_{52}Te^{123}_{71}$	μ −0.73209* I	S. S. Dharmatti, H. E. Weaver, Jr., Phys. Rev. 84, 843(1951). * Based on $\mu(H^1)$ = 2.7934; $\nu(H^2)/\nu(H^1)$ = 0.153506; $\nu(Na^{23})/\nu(H^1)$ = 0.26450.
	μ −0.6 S $\mu(Te^{125})/\mu(Te^{123})$ = 1.19	J. S. Ross, K. Murakawa, Phys. Rev. 83, 229A(1951).
$_{52}Te^{123}_{71}$ ~100^d	τ 121^d γ 0.0887 sπ;ce$^-$ 0.1592	J. M. Cork et al., Phys. Rev. 84, 596(1951). Te^{122}(pile n).
	γ <0.5% (0.248) scin	B. Hamermesh and V. Hummel, Phys. Rev. 84, 381(1951).
$_{52}Te^{125}_{73}$	μ −0.88261* I	S. S. Dharmatti, H. E. Weaver, Jr., Phys. Rev. 84, 843(1951). * Based on $\mu(H^1)$ = 2.7934; $\nu(H^2)/\nu(H^1)$ = 0.153506; $\nu(Na^{23})/\nu(H^1)$ = 0.26450.
	μ −0.7 S	J. S. Ross, K. Murakawa, Phys. Rev. 83, 229A(1951).

$_{52}Te^{125}_{73}$ 58^d	γ	0.0353 0.1096	sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 84, 596(1951). Te^{124}(pile n).
$_{52}Te^{127}_{75}$ 90^d	τ γ	115^d 0.0887	sπ;ce	J. M. Cork et al., Phys. Rev. 84, 596(1951). Te^{126}(pile n).
$_{52}Te^{129}_{77}$ 32^d	τ γ	33.5^d 0.1060	sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 84, 596(1951). Te^{128}(pile n).
$_{53}I^{122}_{69}$	τ β^+	3.6^m 3.1	a	J. N. Young et al., Phys. Rev. 83, 1060(1951). Te^{122}(7.4 Mev p,n).
$_{53}I^{124}_{71}$	No (2.2 Mev β^+)γ coincidences			D. T. Stevenson and M. Deutsch, Phys. Rev. 83, 1202(1951).
$_{53}I^{125}_{72}$	τ 60.0^d K 77% L 23% γ 0.035 <0.05% decay to 58^d Te		pc	G. Friedlander, W. C. Orr, Phys. Rev. 84, 484 (1951). Conclude all decay to 0.035 level, $E_{dis} \sim 0.115$.
$_{53}I^{126}_{73}$	$\beta\gamma(\theta)$ curve indicates I = 2+ for 0.39 level of Xe^{126}.			D. T. Stevenson, M. Deutsch, Phys. Rev. 84, 1071(1951).
$_{53}I^{127}_{74}$	q	−0.65	Mic	W. Gordy, J. Chem. Phys. 19, 792(1951).
$_{53}I^{128}_{75}$	Te K X-rays K/β^-=0.063 No Xβ coincidences		scin	W. B. Mims, H. Halban, Proc. Phys. Soc. (London) 64A, 753 (1951).
$_{53}I^{129}_{76}$	q	−0.47	Mic	W. Gordy, J. Chem. Phys. 19, 792(1951).
$_{53}I^{131}_{78}$	β_1 β_2 β_3	0.250 0.335 0.606	sl; $\beta\gamma$	B. H. Ketelle et al., Phys. Rev. 84, 585(1951).
	γ_1 γ_2 9.4% γ_3 80.0% γ_4 7.7% γ_5 0.6% γ_6 2.3%	0.080 0.284 0.364 0.635 0.163 0.720	scin	
	$\beta_1\gamma_6, \beta_2\gamma_4, \beta_3\gamma_2, \beta_3\gamma_3, e_1^-\gamma_2$			
	β_1^- β_2^- γ_4 7.8* γ_6 1 (0.080γ)(β_2^-) (0.080γ)(β_1^-)?	0.255 0.607 0.6380 0.7239	sl pe$^-$	S. Thulin, Phys. Rev. 83, 860(1951). Te(n,γ);ms. *Relative intensities.
	β^- 13.2% 86.2% 0.6% E_γ / α_K / K/L 0.080 / 0.7 / 7.0 0.284 / 0.039 / K/L+M 0.364 / 0.019 / 4.2 0.636 / 0.0019 0.724	0.334 0.606 (0.807)*	sl	N. F. Verster et al., Physica 17, 637 and 658(1951). *Assumed value. See also Xe^{131}.
	γ (0.080) $\tau = 5 \times 10^{-10}$s (0.364) $\tau < 10^{-10}$s		sl;ce$^-$	R. L. Graham and R. E. Bell, Phys. Rev. 84, 380(1951).
	0.080 quanta/β^- ~2.6% ic 12^d Xe/β^- ~0.8%			E. W. Emery, Phys. Rev. 83, 679(1951).
$_{53}I^{132}_{79}$	γ 88%* 0.68 0.8? 9.5% 1.41 2.4% 2.0 (0.68γ)(1.41γ) No (0.68γ)(2.0γ)		scin	F. C. Maienschein et al., Phys. Rev. 83, 477(1951). *Relative intensities.
$_{54}Xe^{131}_{77}$ ~12^d	γ 0.163 K/L+M = 1.67		sl,ce$^-$	N. F. Verster et al., Physica 17, 637(1951).
$_{55}Cs^{130}_{75}$	No β^+ No γ		sl sl	R. Canada, A. C. G. Mitchell, Phys. Rev. 83, 76, 216A(1951).
$_{55}Cs^{134}_{79}$ 3.15^h	γ (0.128) α_K = 2.2		scin E3	A. W. Sunyar, Phys. Rev. 83, 864(1951). Cs(n,γ).
$_{55}Cs^{134}_{79}$ 2.3^y	β^- 25% 0.092 75% 0.648 γ 0.558 0.600 0.800 1.352		sπ	C. L. Peacock, J. L. Braud, Phys. Rev. 83, 484A(1951). $\alpha_K = 9.1 \times 10^{-3}$ $\alpha_K = 5.7 \times 10^{-3}$ $\alpha_K = 3.0 \times 10^{-3}$
	$\gamma\gamma(\theta)$ consistent with I = 5,4,2,0			B. L. Robinson and L. Madansky, Phys. Rev. 84, 604(1951).
Ba	σ_i(156 Mev) 2.48			A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_{56}Ba^{128}_{72}$	γ 13* 0.122 44 0.196 53 0.213 14 0.241 120 0.371 1000 0.497		sl;pe$^-$	R. Canada, A. C. G. Mitchell, Phys. Rev. 83, 76, 216A(1951). *Relative intensities from pe$^-$'s.
$_{56}Ba^{133}_{77}$ 38.9^h	γ 0.275 α_K = 3		sπ;ce$^-$ scin	R. D. Hill, F. R. Metzger, Phys. Rev. 83, 455(1951). Cs(10 Mev d,2n); chem.
	γ 0.012 $\alpha_{L+M} \sim 130$ $\tau < 5 \times 10^{-7}$s (0.275 γ)(0.012 γ)		pc	R. D. Hill et al., Phys. Rev. 84, 382(1951). Cs(15 Mev d,2n); chem.
$_{56}Ba^{135}_{79}$ 28.7^h	γ 0.267		scin; sl,ce$^-$	W. H. Cuffey, R. Canada, Phys. Rev. 83, 654(1951).
	γ 0.269 α_K = 3.5, K/L ~2		sπ;ce$^-$	R. D. Hill, F. R. Metzger, Phys. Rev. 83, 455(1951). Ba^{134}(pile n).
$_{56}Ba^{140}_{84}$	τ 13.4^d γ 0.0296 0.304 0.132 0.537 0.162		s;ce$^-$	J. M. Cork et al., Phys. Rev. 83, 856 (1951). Fission. No 0.076γ.

	τ 2.0×10^{11} y γ 51% 0.535 scin 33% 0.807 15% 1.390 <0.2 particles/sec/g with E > 0.1. Ba x-ray?	R. W. Pringle et al., Phys. Rev. 84, 1066 (1951).
$_{57}La^{140}_{83}$	γ s,ce$^-$ 0.069 0.241 0.752 0.109 0.265 0.816 0.110 0.329 0.926 0.131 0.431 1.597 0.173 0.486 1.904	J. M. Cork et al., Phys. Rev. 83, 856(1951). Fission.
	(2.26β)(1.60γ) (1.60γ)(0.82γ) $\gamma\gamma$ (θ) indicates I = 4+, 2+, 0+ for 2.42, 1.60, 0 levels in Ce^{140}	B. L. Robinson, L. Madansky, Phys. Rev. 84, 1067(1951).
$_{57}La^{141}_{84}$	β^- ~5 0.9 sl ~95 2.43 γ low intensity scin, $\beta\gamma$	R. B. Duffield, L. M. Langer, Phys. Rev. 84, 1065(1951).
Ce	σ_a(th n) 0.80 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
$_{58}Ce^{137}_{79}$	γ 0.2534 s;ce$^-$	H. B. Keller, J. M. Cork, Phys. Rev. 83, 216A(1951); 84, 1079 (1951).
$_{58}Ce^{139}_{81}$	γ 0.1660 s;ce$^-$ 0.2752	H. B. Keller, J. M. Cork, Phys. Rev. 83, 216A(1951); 84, 1079 (1951).
$_{58}Ce^{141}_{83}$	β^- 0.42 0.57 s γ 0.143 s;ce$^-$,pe$^-$	E. Kondaiah, Phys. Rev. 83, 471(1951).
	γ 0.1457 s;ce$^-$ No 0.315γ observed	H. B. Keller, J. M. Cork, Phys. Rev. 83, 216A(1951); 84, 1079 (1951).
	γ 0.141 scin No γ 0.3 < E_γ < 0.6 $\beta\gamma$	R. B. Duffield, L. M. Langer, Phys. Rev. 84, 1065(1951).
$_{58}Ce^{143}_{85}$	β^- ~30% 0.37? ~40% 1.09 s ~30% 1.37 γ ~15% 0.057 ~70% 0.283 s; ce$^-$, ~15% 0.649 pe$^-$ ~15% 0.705	E. Kondaiah, Phys. Rev. 83, 471(1951).
	γ 0.0575 K/L < 1 s;ce$^-$ 0.2906 K/L = 10 w 0.3484 K ce$^-$	H. B. Keller, J. M. Cork, Phys. Rev. 83, 216A(1951); 84, 1079 (1951).
$_{58}Ce^{144}_{86}$	τ 282^d pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
$_{59}Pr^{141}_{82}$	μ value of 4.5669 due to Rb^{87} impurity	D. Williams, Phys. Rev. 83, 858(1951).
$_{59}Pr^{143}_{84}$	β^- 0.915 s	E. Kondaiah, Phys. Rev. 83, 471(1951).
$_{60}Nd^{147}_{87}$	τ 11.1^d β_1^- ~25% 0.38 β_2^- ~15% 0.60 sl β_3^- ~60% 0.825 γ_1 0.0915 K/L ~2.5 ce$^-$ γ_2 0.320 γ_3 0.534	W. S. Emmerich, J. D. Kurbatov, Phys. Rev. 83, 40(1951). Nd(n,γ). β_3X, $\beta_3 e_1^-$, $\beta_2 e_2^-$, and $\beta\gamma$. No $\gamma\gamma$, γX, or XX.
$_{61}Pm^{147}_{86}$	τ 2.6^y pc	R. P. Schuman and A. Camilli, Phys. Rev. 84, 158(1951).
Sm	σ_s/σ_a graph E_n = 0.02 - 0.15 ev $\Gamma_n/\Gamma(E_o = 0.096)$ ~0.008	B. N. Brockhouse, D. G. Hurst, Phys. Rev. 83, 841(1951).
$_{62}Sm^{150}_{88}$	Sm(th n,γ) s;ce$^-$ E_γ = 0.341 if K ce$^-$ was observed	C. T. Hibdon, C. O. Muehlhause, Phys. Rev. 83, 235A(1951)
$_{63}Eu^{145}_{82}$	τ 5^d e$^-$ 0.2 a	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Tb^{149} α decay, Sm^{147}(50 Mev p,3n); chem.
$_{63}Eu^{146}_{83}$	τ 38^h e$^-$ 0.4 a	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Sm^{147}(19 Mev d,3n), Sm^{144}(25 Mev α).
$_{63}Eu^{147}_{84}$	τ 24^d e$^-$ 0.2 a α 2.88 ic α/K~10^{-5}	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Sm^{147}(8.5 Mev p,n), chem.
$_{63}Eu^{148}_{85}$	τ 50^d e$^-$ 0.38 a	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Sm^{148}(8.5 Mev p,n).
$_{63}Eu^{149}_{86}$	τ <1^h or >50^d	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Sm^{149}(8.5 Mev p,n).
Gd	σ_s/σ_a indicates more than one level	B. N. Brockhouse, D. G. Hurst, Phys. Rev. 83, 841(1951).
	σ_a(th n) 35,000 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
$_{64}Gd^{149}_{85}$	τ 9^d α 3.0 ic e$^-$ 0.35 a	R. W. Hoff et al., Phys. Rev. 83, 1068(1951). Eu(~30 Mev p,3n), Sm^{147}(~30 Mev α,2n), chem.
$_{64}Gd^{150?}_{94}$	Gd(th n,γ) s;ce$^-$ E_γ = 0.080, 0.090, 0.185(?)	C. T. Hibdon, C. O. Muehlhause, Phys. Rev. 83, 235A(1951).
Tb	σ_a(th n) 44 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
Dy	σ_a(th n) 890 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
Ho	σ_a(th n) 64 osc	H. Pomerance, Phys. Rev. 83, 641(1951).

$_{72}Hf^{175}_{103}$	γ 0.0891 0.228 | 0.113 0.342 — sπ; ce⁻ (Lu)	S. B. Burson et al., Phys. Rev. 83, 62, 222A(1951). $Hf^{174}(n,\gamma)$.
$_{72}Hf^{179}_{107}$ 19^s	γ 0.161 0.217 — s;ce⁻ scin	S. B. Burson et al., Phys. Rev. 83, 62, 222A(1951). $Hf^{178}(n,\gamma)$.
	τ 19^s γ ~0.150 scin α large, M3? 0.215 $e^-\gamma$, $X\gamma$(delay <0.5$^{\mu s}$)	E. der Mateosian, M. Goldhaber, Phys. Rev. 83, 843(1951). $Hf^{178}(n,\gamma)$.
$_{72}Hf^{180}_{108}$ 5.5^h	τ 5.5^h γ 0.0568 0.330 | 0.0932 0.442 | 0.214 — sπ; ce⁻ (Hf) (0.330γ)(0.442γ)	S. B. Burson et al., Phys. Rev. 83, 62, 222A(1951). $Hf^{179}(n,\gamma)$; chem.
$_{72}Hf^{181}_{109}$	β^- 0.420 | γ 0.133 0.481 | 0.136 0.611 | 0.344 — s; s; ce⁻ (Ta) (0.420β)e⁻ delay; e⁻e⁻	S. B. Burson et al., Phys. Rev. 83, 62, 222A(1951). $Hf^{180}(n,\gamma)$.
$_{73}Ta^{180}_{107}$	τ 8.0^h β- 0.7 a W^{182}(≤30 Mev γ,pn); chem.	A. J. Moses and D. S. Martin, Jr., Phys. Rev. 84, 366(1951)
$_{73}Ta^{182}_{109}$ 16.4^m	γ (0.180) scin α_K = 0.8 E3	A. W. Sunyar, Phys. Rev. 83, 864(1951). Ta(n,γ).
$_{73}Ta^{183?}_{110}$	τ 6.0^d β^- 0.6 a W(≤30 Mev γ); chem.	A. J. Moses and D. S. Martin, Jr., Phys. Rev. 84, 366(1951).
$_{73}Ta^{185}_{112}$	τ 48^m β^-,e^-? 0.15 a β^- 1.6 a No ββ for delay <10$^{\mu s}$	A. J. Moses and D. S. Martin, Jr., Phys. Rev. 84, 366(1951). W(≤30 Mev γ); chem.
	σ_t(14 Mev) 4.62	L. S. Goodman, ANL-4602 (Mar. 1951).
	Isotope shifts $\Delta(W^{186}-W^{184}):\Delta(W^{184}-W^{182}):\Delta(W^{182}-W^{180})$ = 1: 1.13: 1.02	J. A. Vreeland, K. Murakawa, Phys. Rev. 83, 229A(1951).
$_{74}W^{180}_{106}$	σ(th n,γ)140^{d}W ≈2	M. Lindner, Phys. Rev. 84, 240(1951).
$_{74}W^{181}_{107}$	τ ~120^d X-rays, hard γ's	M. Lindner, Phys. Rev. 84, 240(1951). W(n,γ).
$_{74}W^{183}_{109}$	μ +0.08 S	J. A. Vreeland, K. Murakawa, Phys. Rev. 83, 229A(1951).
$_{74}W^{187}_{113}$	σ(th n,γ)65^{d}W 80	M. Lindner, Phys. Rev. 84, 240(1951).
Re	Resonances* E_0 2.1, 5.7, 7.1, 10.9(Re^{187}), 18	S. P. Harris, Phys. Rev. 83, 235A(1951) and *verbal report.
$_{75}Re^{185?}_{114}$	τ(~0.2β^-) ~150^d τ(~0.75β^-) >5^y	M. Lindner, Phys. Rev. 84, 240(1951). Re(th n,γ); chem.
$_{76}Os^{184}_{108}$	σ(th n,γ)97^{d}Os ~20	M. Lindner, Phys. Rev. 84, 240(1951).
$_{76}Os^{185}_{109}$	K X-rays/L X-rays = 1.5	M. M. Miller, R. G. Wilkinson, Phys. Rev. 83, 1050(1951).
$_{76}Os^{189}_{113}$	I ½ S μ +0.6 S	S. Suwa, Phys. Rev. 83, 1258(1951).
$_{76}Os^{193}_{117}$	σ(th n,γ)700^{d}Os 190*	M. Lindner, Phys. Rev. 84, 240(1951). [*Based on $\sigma(Os^{192})$ = 1.6.]
$_{76}Os^{194}_{118}$	τ ~700^d p 19.0^{h}Ir	M. Lindner, Phys. Rev. 84, 240(1951). Os(th n,γ)(th n,γ).
Ir	σ_a(th n) 440 osc	H. Pomerance, Phys. Rev. 83, 641(1951).
$_{77}Ir^{192}_{115}$ 70^d	τ 78^d 9 γ's assigned to β^- decay, 4 γ's to K	J. M. Cork et al., Phys. Rev. 83, 222A (1951). Ir(n,γ).
$_{77}Ir^{194}_{117}$	γ 0.3275 s;ce⁻	J. M. Cork et al., Phys. Rev. 83, 222A (1951). Ir(n,γ).
	No γ a	M. Lindner, Phys. Rev. 84, 240(1951).
$_{79}Au^{191}_{112}$	τ 18.0^h d 12.4^h Hg	J. H. Moon, A. L. Thompson, Phys. Rev. 83, 892A(1951).
$_{79}Au^{196}_{117}$ 5.55^d	γγ(θ) indicates I = 2,2,0	R. M. Steffen, D. M. Roberts, Phys. Rev. 83, 222A(1951).
$_{79}Au^{197}_{118}$	q ~+0.5 S	W. von Siemens, Naturwissenschaften 38, 455(1951).
$_{79}Au^{198}_{119}$	β^- 0.290 sl,βγ γ ~ 1% 0.680 scin ~0.2% 1.09 scin (0.680γ)(0.290β and e^- of 0.411γ)	A. R. Brosi et al., Phys. Rev. 84, 586(1951).
	γ (0.411) sl;ce⁻ $\tau < 3 \times 10^{-\mu s}$	R. L. Graham and R. E. Bell, Phys. Rev. 84, 380(1951).
	σ(th n,γ)3.3^{d}Au = 3.8×10^4	P. M. Sherk and R. D. Hill, Phys. Rev. 83, 1097(1951).
$_{79}Au^{199}_{120}$	β_1^- 22.5% 0.250 β_2^- 73.5% 0.300 β_3^- 4% 0.460 — sπ	P. M. Sherk and R. D. Hill, Phys. Rev. 83, 1097(1951).
	γ 3.5% 0.050 | 77% 0.159 | 19% 0.209 — sπ; ce⁻, sl; pe⁻	α_L = 6 α_K = 0.19; K/L = 0.61 α_K = 0.54; K/L = 5.4
	γ (0.158) sl;ce⁻ $\tau = 2.4 \times 10^{-9s}$ (0.207) $\tau < 2 \times 10^{-10s}$	R. L. Graham and R. E. Bell, Phys. Rev. 84, 380(1951).
$_{80}Hg^{191}_{111}$	τ 12.4^h K Soft, converted γ's Mass from daughters	J. H. Moon, A. L. Thompson, Phys. Rev. 83, 892A(1951). Au(60 Mev p); chem.

$_{80}Hg^{182}_{112}$	τ 8.4^h K Soft, converted γ's Mass from daughters	J. H. Moon, A. L. Thompson, Phys. Rev. 83, 892A(1951). Au(55 Mev p); chem.
$_{80}Hg^{183}_{113}$	τ_1 14.5^h τ_2 29.0^h K Soft, converted γ's Mass from daughters	J. H. Moon, A. L. Thompson, Phys. Rev. 83, 892A(1951). Au(45 Mev p); chem.
$_{80}Hg^{185}_{115}$	τ 38^n K Soft, converted γ's Mass from daughters	J. H. Moon, A. L. Thompson, Phys. Rev. 83, 892A(1951). Au(25 Mev p); chem.
$_{80}Hg^{199}_{119}$	μ 0.56 S	E. W. Foster, Proc. Roy. Soc. (London) 208A, 367(1951).
$_{80}Hg^{203}_{123}$	β^- 0.210 pc γ 0.278 sπ,pe$^-$ α_K = 0.25 K/L = 3.7	H. W. Wilson, S. C. Curran, Phil. Mag. 42, 762(1951).
$_{81}Tl^{199}_{118}$	γ's (kev) sπ,ce$^-$ 47 157 332 78 206 454 103 245 490	H. I. Isreal, R. G. Wilkinson, Phys. Rev. 83, 1051(1951). Au(α,2n), chem. No β^+.
$_{81}Tl^{200}_{119}$	γ's (kev) sπ,ce$^-$ 365 622 1,210 577 829 1,360	H. I. Isreal, R. G. Wilkinson, Phys. Rev. 83, 1051(1951). Au(α,n), chem. No β^+
$_{81}Tl^{208}_{127}$	γ 2.6147 ± 0.0006 H_ρ = 9988 ± 2 gauss cm (based on p resonance)	W. L. Brown, Phys. Rev. 83, 271(1951).
	H_ρ(L) = 2607.17 ± 0.30 γ_L 510.85 ± 0.08 kev	G. Lindström, Arkiv Fysik 4, 1(1951).
Pb	σ_t(14 Mev) 5.0	L. S. Goodman, ANL-4602 (Mar. 1951).
	σ_t(156 Mev) 3.50	A. E. Taylor et al., Phil. Mag. 42, 751(1951).
$_{82}Pb^{207?}_{125}$	τ 0.82^s	J. Lascoux and G. Vendryes, Compt. rend. 233, 858, (1951).
$_{82}Pb^{210}_{128}$	γ 0.0467 sl α_L = 13.5 Bi Auger lines	D. K. Butt, W. D. Brodie, Proc. Phys. Soc. (London) 64A, 791(1951).
	γ 100% 0.0464 sπ;ce$^-$ ce$^-$'s of other γ's <1%	J. M. Cork et al., Phys. Rev. 83, 681 (1951).
	Coincidences stopped by ~0.3 mg/cm^2 (both G-M's) ~1.8 mg/cm^2 (one G-M) Conclude E_β < 8 kev	P. Falk-Vairant et al., Compt. rend. 233, 1025(1951).
$_{82}Pb^{212}_{130}$	H_ρ(I) = 1754.01 ± 0.20 H_ρ(F) = 1388.56 ± 0.15 γ_1 238.63 ± 0.04 kev	G. Lindström, Arkiv Fysik 4, 1(1951).
$_{82}Pb^{214}_{132}$	γ 0.0529 0.2946 sπ; 0.2415 0.3509 ce$^-$	J. M. Cork et al., Phys. Rev. 83, 681 (1951).
	E_γ K^* L_1^* M_1^* N_1^* 0.240 415 60 17 sπ 0.294 480 75 20 0.350 540 95 30 5	S. Kageyama, J. Phys. Soc. (Japan) 6, 285 (1951). *Intensities of ce$^-$ lines relative to I(K line of 0.606γ of RaC) = 40.
Bi	σ_t(14 Mev) 5.13	L. S. Goodman, ANL-4602 (Mar. 1951).
$_{83}Bi^{207}_{124}$	γ ~100% 0.56 scin ~100% 1.1 $\gamma\gamma$, Pb K x-ray	M. A. Grace, J. R. Prescott, Phys. Rev. 84, 1059(1951).
$_{83}Bi^{210}_{127}$ 4.85^d	Continuous γ spectrum $\gamma(E_\gamma > 0.09)/\beta^- = 0.0016$	L. Madansky, F. Rasetti, Phys. Rev. 83, 187(1951).
$_{83}Bi^{212}_{129}$	α to 0.608 level 0.016% of α's	A. Rytz, Compt. rend. 233, 790(1951).
$_{83}Bi^{214}_{131}$	γ 0.0625 * 1.122 ** sπ; 0.1911 * 1.241 ** ce$^-$ 0.609 ** 1.419 0.769 ** 1.766 0.935	J. M. Cork et al., Phys. Rev. 83, 681 (1951). *Converted in Tl. **Converted in Po.
$_{84}Po^{200}_{116}$	τ 11^m K predominant α 5.84 ic	D. G. Karraker et al., Phys. Rev. 83, 390 (1951). Bi(100 Mev p); chem. p 27^{h}Tl.
$_{84}Po^{201}_{117}$	τ 18^m K predominant α 5.70 ic	D. G. Karracker et al., Phys. Rev. 83, 390(1951). Bi(100 Mev p); chem. p 72^{h}Tl.
$_{84}Po^{202}_{122}$	α 5.21 ic	D. G. Karraker et al., Phys. Rev. 83, 390 (1951).
$_{84}Po^{207}_{123}$	α 5.10 ic	D. G. Karraker et al., Phys. Rev. 83, 390 (1951).
$_{84}Po^{208}_{124}$	α 5.10 ic	D. G. Karraker et al., Phys. Rev. 83, 390 (1951).
$_{84}Po^{209}_{125}$	α 4.86 ic	D. G. Karraker et al., Phys. Rev. 83, 390 (1951).
$_{84}Po^{210}_{126}$	γ 0.784 sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 83, 681 (1951).
	α 5.298 EA Based on Li(p,n) threshold = 1.882	W. J. Sturm, V. Johnson, Phys. Rev. 83, 542(1951).
$_{84}Po^{214?}_{130}$	γ 0.4575 sπ;ce$^-$	J. M. Cork et al., Phys. Rev. 83, 681 (1951). In Ra^{226}, not Pb^{210} source.
$_{84}Po^{214}_{130}$	α 7.683 EA Based on Li(p,n) threshold = 1.882	W. J. Sturm, V. Johnson, Phys. Rev. 83, 542(1951).

$_{86}Rn^{222}_{136}$	τ	3.825 ± 0.0005^d		J. Tobailen, Compt. rend. 233, 1360(1951). Differential ic's.
$_{88}Ra^{226}_{138}$	γ	0.1856	$s\pi$;ce$^-$	J. M. Cork et al., Phys. Rev. 83, 681 (1951).
	α	~93.3% (4.8) ~6.5% (4.6) ~0.2% 4.21		G. Bastin-Scoffier, Compt. rend. 233, 945(1951).
$_{89}Ac^{227}_{138}$	I	½	S	F. S. Tompkins et al., Phys. Rev. 84, 168(1951).
$_{90}Th^{228}_{138}$	$\alpha\gamma(\theta)$ indicates $0 \xrightarrow{\alpha} 2 \xrightarrow{\gamma} 0$ predominant			J. K. Beling et al., Phys. Rev. 84, 155(1951).
$_{91}Pa^{234}_{143}$ 1.14^m	Possible n emitter			M. da Silveira, Portugaliae Phys. 1, 167(1945).
$_{91}Pa^{234}_{143}$ 1.14^m	n radiation assigned to UX_2^* probably is from spontaneous fission of U^{235}.			M. E. Nahmias, Compt. rend. 233, 1185(1951). *M. da Silveira, Portugaliae Phys. 1, 167(1945).
$_{93}Np^{239}_{146}$	β_1^- 0.31 β_2^- 0.44	β_3^-0.70	sl	R. L. Graham, R. E. Bell, Phys. Rev. 83, 222A(1951). $\gamma_3\gamma_8$. No $\gamma_7\gamma_8$. No $\beta_2\gamma$. $1.1 \times 10^{-3\mu s}$ delay between β_2 and γ_8, γ_7, and γ_8.
	γ_0 0.049 γ_1 0.057 γ_2 0.061 γ_3 0.067	$\gamma_6$0.210 $\gamma_7$0.227 $\gamma_8$0.276	sl; ce$^-$	
	β^- 0.34 0.44	0.65 0.72	$s\pi\sqrt{2}$	E. P. Tomlinson et al., Phys. Rev. 83, 223A(1951).
	γ 0.0442 0.0490 0.0570 0.0614 0.0675	0.105 0.209 0.228 0.254 0.277 0.286	$s\pi\sqrt{2}$; ce$^-$	
$_{94}Pu^{240}_{146}$	τ	6580^y		M. G. Inghram et al., Phys. Rev. 83, 1250(1951).
	τ	6240^y		E. F. Westrum Jr., Phys. Rev. 83, 1249(1951).
$_{94}Pu^{242}_{148}$	σ(th n,γ)5^h Pu	~100		J. C. Sullivan et al., Phys. Rev. 83, 1267(1951).
$_{94}Pu^{243}_{149}$	τ	5^h		J. C. Sullivan et al., Phys. Rev. 83, 1267(1951).
	β^-	~0.5	a	
	τ	5.0^h		S. G. Thompson et al., Phys. Rev. 84, 164(1951). Pu^{242}(n,γ).
	β^-	0.39	s,a	
	γ	0.095	s,a	
		0.12	s,a	
$_{97}Bk^{245}_{148}$	τ	4.95^d		E. K. Hulet et al., Phys. Rev. 84, 366(1951). Produced by $Cm^{242,243,244}$(d), chem; not by $Am^{241}(\alpha)$.
	α 34%	5.90	ic	
	48%	6.15		
	18%	6.33		
	α/K ~ 0.1%			
$_{98}Cf^{246}_{148}$	τ	35.7^h		E. K. Hulet et al., Phys. Rev. 84, 366(1951). p Cm^{242}.
	α	6.75	ic	
	No K			

Q's Between Ground States

T(d,α)n	17.578 ± 0.030	R. M. Williamson et al., Phys. Rev. 84, 731(1951).
Li^6(p,α)He^3	4.024 ± 0.005	
H^3(p,n)He^3	−0.7647	T. W. Bonner and J. W. Butler, Phys. Rev. 83, 1091(1951).
H^3(p,γ)He^4	19.7 ± 0.3 s,pe$^-$	R. S. Rochlin, Phys. Rev. 84, 165(1951).
$Be^8 \rightarrow 2He^4$	0.0775 ± 0.004	R. R. Carlson, Phys. Rev. 84, 749(1951).
Li^6(γ,n)Li^5	−5.35 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
Be^9(p,α)Li^6	2.130 ± 0.010	R. R. Carlson, Phys. Rev. 84, 749 (1951).*
Be^9(p,α)Li^6	2.123 ± 0.004	C. P. Browne et al., Phys. Rev. 83, 179(1951).
Be^9(p,α)Li^6	2.123 ± 0.004	R. M. Williamson et al., Phys. Rev. 84, 731(1951).
Be^9(d,α)Li^7	7.159 ± 0.009	
Li^7(d,p)Li^8	−0.192 ± 0.001	
Be^9(p,d)Be^8	0.558 ± 0.002	
Be^9(d,t)Be^8	4.67 ± 0.03 ppl	F. A. El-Bedewi, Proc. Phys. Soc. (London) 64A, 947(1951).
Be^9(p,d)Be^8	0.558 ± 0.005	R. R. Carlson, Phys. Rev. 84, 749(1951).
Be^9(d,p)Be^{10}	4.55 ± 0.03 ppl	A. J. Salmon, Proc. Phys. Soc. (London) 64A, 848(1951).
B^{10}(γ,n)B^9	−8.55 ± 0.25	R. Sher, et al., Phys. Rev. 84, 387 (1951).*
B^{11}(γ,n)B^{10}	−11.50 ± 0.25	
O^{16}(d,α)N^{14}	3.09 ± 0.02	H. B. Burrows et al., Proc. Roy. Soc. (London) 209A, 478(1951).
O^{16}(d,p)O^{17}	1.93 ± 0.01	
F^{19}(d,α)O^{17}	10.04 ± 0.02	
O^{16}(d,n)F^{17}	−1.631	T. W. Bonner and J. W. Butler, Phys. Rev. 83, 1091(1951).

$Ne^{20}(d,\alpha)F^{18}$	2.78 ± 0.02 ppl	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) 64A, 801(1951).
$O^{18}(\alpha,p)F^{19}$	−8.08 ± 0.1	M. L. Bullock, M. B. Sampson, Phys. Rev. 84, 967(1951).
$F^{19}(d,p)F^{20}$	4.39 ± 0.03	H. B. Burrows et al., Proc. Roy. Soc. (London) 209A, 478(1951).
$F^{19}(n,\gamma)F^{20}$	6.63 ± 0.03	B. B. Kinsey et al., Phys. Rev. 83, 519(1951).
$Ne^{22}(d,\alpha)F^{20}$	2.62 ± 0.10 ppl	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) 64A, 801(1951).
$Ne^{20}(d,p)Ne^{21}$	4.54 ± 0.04 ppl	R. Middleton, C. T. Tai, Proc. Phys. Soc. (London) 64A, 801(1951).
$Na^{23}(\gamma,n)Na^{22}$	−12.05 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Mg^{24}(\gamma,n)Mg^{23}$	−16.55 ± 0.25	
$Mg^{25}(\gamma,n)Mg^{24}$	−7.25 ± 0.20	
$Al^{27}(d,\alpha)Mg^{25}$	6.694 ± 0.010	H. Enge et al., Phys. Rev. 83, 31(1951).
$Mg^{26}(\gamma,n)Mg^{25}$	−11.15 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Al^{27}(\gamma,n)Al^{26}$	−12.75 ± 0.20	
$Al^{27}(n,\gamma)Al^{28}$	7.6	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663 (1951).
$Al^{27}(n,\gamma)Al^{28}$	7.72 ± 0.01	B. B. Kinsey et al., Phys. Rev. 83, 519(1951).
$Al^{27}(d,p)Al^{28}$	5.53	K. K. Keller, Phys. Rev. 84, 884(1951).
$Al^{27}(d,p)Al^{28}$	5.494 ± 0.010	H. Enge et al., Phys. Rev. 83, 31(1951).
$Si^{29}(\gamma,n)Si^{28}$	−8.45 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Si^{28}(n,\gamma)Si^{29}$	8.51 ± 0.04	B. B. Kinsey et al., Phys. Rev. 83, 519(1951).
$Si^{28}(d,p)Si^{29}$	6.246 ± 0.010	P. M. Endt et al., Phys. Rev. 83, 491(1951).
$Si^{29}(n,\gamma)Si^{30}$	10.55 ± 0.05	B. B. Kinsey et al., Phys. Rev. 83, 519(1951).
$P^{31}(d,\alpha)Si^{29}$	8.17 ± 0.02	P. M. Endt et al., Phys. Rev. 83, 491(1951).
$P^{31}(\gamma,n)P^{30}$	−12.05 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$S^{34}(\gamma,n)S^{33}$	−10.85 ± 0.20	
$Cl^{35?}(\gamma,n)Cl^{34}$ $Cl^{37?}(\gamma,n)Cl^{36}$	−9.95 ± 0.20	
$A^{40}(\gamma,p)Cl^{39}$	−10.8 ± 0.1	D. H. Wilkinson, J. H. Carver, Phys. Rev. 83, 466(1951).
$V^{51}(\gamma,n)V^{50}$	−11.15 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Cr^{52}(\gamma,n)Cr^{51}$	−11.80 ± 0.25	
$Cr^{53}(\gamma,n)Cr^{52}$	−7.75 ± 0.20	
$Mn^{55}(\gamma,n)Mn^{54}$	−10.00 ± 0.20	
$Mn^{55}(n,\gamma)Mn^{56}$	7.2	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663 (1951).
$Mn^{55}(n,\gamma)Mn^{56}$	7.16 ± 0.05	R. W. Pringle, G. Isford, Phys. Rev. 83, 467(1951).
$Fe^{56}(\gamma,n)Fe^{55}$	−11.15 ± 0.25	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Fe^{57}(\gamma,n)Fe^{56}$	−7.75 ± 0.20	
$Fe^{56}(n,\gamma)Fe^{57}$	7.4	B. Hamermesh, V. Hummel, Phys. Rev. 83, 663 (1951).
$Co^{59}(\gamma,n)Co^{58}$	−10.25 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Co^{59}(p,n)Ni^{59}$	1.857 ± 0.003	J. J. McCue and W. M. Preston, Phys. Rev. 84, 384(1951).
$Cu^{63}(\gamma,n)Cu^{62}$	−10.85 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Cu^{65}(\gamma,n)Cu^{64}$	−9.75 ± 0.20	
$Zn^{64}(\gamma,n)Zn^{63}$	−11.65 ± 0.20	
$Zn^{66}(\gamma,n)Zn^{65}$	−11.15 ± 0.20	
$Zn^{67}(\gamma,n)Zn^{66}$	−7.00 ± 0.20	
$Zn^{68}(\gamma,n)Zn^{67}$	−10.15 ± 0.20	
$Ga^{69}(\gamma,n)Ga^{68}$	−10.10 ± 0.20	
$Ga^{71}(\gamma,n)Ga^{70}$	−9.05 ± 0.20	
$As^{75}(\gamma,n)As^{74}$	−10.10 ± 0.20	
$Se^{?}(\gamma,n)Se^{?}$	−7.30 ± 0.20	
$Se^{?}(\gamma,n)Se^{?}$	−9.35 ± 0.20	
$Br^{79}(\gamma,n)Br^{78}$	−10.60 ± 0.20	
$Br^{81}(\gamma,n)Br^{80}$	−9.95 ± 0.20	

$Sr^{86}(\gamma,n)Sr^{85}$	-9.50 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Sr^{87}(\gamma,n)Sr^{86}$	-8.40 ± 0.20	
$Sr^{88}(\gamma,n)Sr^{87}$	-11.15 ± 0.20	
$Nb^{93}(\gamma,n)Nb^{92}$	-8.70 ± 0.20	
$Mo^{?}(\gamma,n)Mo^{?}$	-6.75 ± 0.25	
$Mo^{?}(\gamma,n)Mo^{?}$	-7.95 ± 0.25	
$Ru^{?}(\gamma,n)Ru^{?}$	-7.05 ± 0.20	
$Ru^{?}(\gamma,n)Ru^{?}$	-9.50 ± 0.20	
$Rh^{103}(\gamma,n)Rh^{102}$	-9.35 ± 0.20	
$Pd^{?}(\gamma,n)Pd^{?}$	-7.05 ± 0.20	
$Pd^{?}(\gamma,n)Pd^{?}$	-9.35 ± 0.20	
$Ag^{109}(\gamma,n)Ag^{108}$	-9.05 ± 0.20	
$Cd^{113}(\gamma,n)Cd^{112}$	-6.55 ± 0.20	
$In^{115}(\gamma,n)In^{114}$	-9.05 ± 0.20	
$Sn^{118}(\gamma,n)Sn^{117}$	-9.10 ± 0.20	
$Sn^{119}(\gamma,n)Sn^{118}$	-6.60 ± 0.20	
$Sb^{121}(\gamma,n)Sb^{120}$ $Sb^{123}(\gamma,n)Sb^{122}$	-8.95 ± 0.25	
$Te^{?}(\gamma,n)Te^{?}$	-6.50 ± 0.20	
$Te^{?}(\gamma,n)Te^{?}$	-8.55 ± 0.20	
$I^{127}(\gamma,n)I^{126}$	-9.10 ± 0.20	
$Cs^{133}(\gamma,n)Cs^{132}$	-9.05 ± 0.20	
$Ba^{?}(\gamma,n)Ba^{?}$	-6.80 ± 0.20	
$Ba^{?}(\gamma,n)Ba^{?}$	-8.55 ± 0.25	
$La^{139}(\gamma,n)La^{138}$	-8.80 ± 0.20	
$Ce^{140}(\gamma,n)Ce^{139}$	-9.05 ± 0.20	
$Ce^{142}(\gamma,n)Ce^{141}$	-7.15 ± 0.20	
$Ta^{181}(\gamma,n)Ta^{180}$	-7.55 ± 0.20	
$W^{?}(\gamma,n)W^{?}$	-6.25 ± 0.30	
$W^{?}(\gamma,n)W^{?}$	-7.15 ± 0.30	
$Re^{187}(\gamma,n)Re^{186}$	-7.30 ± 0.30	
$Ir^{193}(\gamma,n)Ir^{192}$	-7.80 ± 0.20	
$Pt^{194}(\gamma,n)Pt^{193}$	-9.50 ± 0.20	
$Pt^{196}(\gamma,n)Pt^{194}$	-6.10 ± 0.20	
$Pt^{196}(\gamma,n)Pt^{195}$	-8.20 ± 0.20	R. Sher et al., Phys. Rev. 84, 387 (1951).*
$Au^{197}(\gamma,n)Au^{196}$	-7.90 ± 0.20	
$Tl^{203}(\gamma,n)Tl^{202}$	-8.80 ± 0.20	
$Tl^{205}(\gamma,n)Tl^{204}$	-7.55 ± 0.20	
$Pb^{207}(\gamma,n)Pb^{206}$	-6.75 ± 0.20	
$Pb^{208}(\gamma,n)Pb^{207}$	-7.30 ± 0.20	
$Bi^{209}(\gamma,n)Bi^{208}$	-7.40 ± 0.20	
$Th^{232}(\gamma,n)Th^{231}$	-6.35 ± 0.04	L. B. Magnusson et al., Phys. Rev. 84, 166(1951).

*Detected n's in BF_3 counters.

Packing Fraction Differences, Δf, in Units 10^{-4} amu

Entries under both members of doublets except for those involving hydrocarbons

Doublet	Δf	Reference
$CH_4 - O$	22.777 ± 0.003	K. Ogata, H. Matsuda, Phys. Rev. 83, 180(1951).
$C_2H_4 - CO$	13.018 ± 0.002	
$N^{14} - CH_2$	-8.996 ± 0.001	
$N_2^{14} - C_2H_4$	-9.000 ± 0.002	
$N^{15} - CH_3$	-15.597 ± 0.003	
$S^{32} - O_2$	-5.550 ± 0.002	T. L. Collins et al., Phys. Rev. 84, 717(1951).
$S^{33}O - C_4$	-6.902 ± 0.003	
$CO_2 - C_3H_8$	-16.558 ± 0.004	
$S^{32} - Ni^{64}$	$+2.65 \pm 0.02$	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$S^{33}O - C_4H$	-8.446 ± 0.009	T. L. Collins et al., Phys. Rev. 84, 717(1951).
$S^{34}O - C_4H_2$	-10.580 ± 0.008	
$HCl^{35} - C_3$	-6.484 ± 0.012	
$HCl^{37} - C_3H_2$	-11.056 ± 0.012	
$A^{36} - C_3$	-9.028 ± 0.009	
$A^{36} - H_2O$	-14.899 ± 0.015	
$A^{38} - C_3H_2$	-13.924 ± 0.010	
$K^{39} - C_3H_3$	-15.360 ± 0.007	
$K^{41} - C_3H_5$	-18.869 ± 0.008	
$Ca^{42} - C_3H_6$	-21.011 ± 0.008	
$Ca^{43} - C_3H_7$	-22.335 ± 0.012	
$Ca^{44} - CO_2$	-7.865 ± 0.013	
$Ca^{48} - C_4$	-9.915 ± 0.021	
$Sc^{45}O - C_2O_2H_5$	-12.839 ± 0.007	
$Ti^{47} - Pr^{141}$	-3.64 ± 0.03	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$Fe^{58} - Th^{232}$	-13.17 ± 0.06	G. S. Stanford, H. E. Duckworth, Phys. Rev. 83, 229 (A)(1951).
$Ni^{60} - Hf^{180}$	-8.57 ± 0.03	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$Ni^{64} - O^{16}$	-8.25 ± 0.03	
$Ni^{64} - S^{32}$	-2.65 ± 0.02	
$Cu^{63} - Te^{128}$	-3.61 ± 0.07	
$Cu^{65} - Te^{130}$	-3.98 ± 0.06	
$Zn^{64} - Te^{128}$	-3.91 ± 0.07	
$Ge^{70} - Ce^{140}$	-4.25 ± 0.03	
$Ge^{73} - Nd^{144}$	-4.85 ± 0.07	
$Ge^{73} - Nd^{146}$	-4.64 ± 0.08	

Doublet	Δf	Reference
$Kr^{82} - C_3H_5$	−20.219 ± 0.03	C. L. Kegley, H. E. Duckworth, Phys. Rev. 83, 229(A)(1951).
$Sr^{88} - Hf^{176}$	−7.11 ± 0.04	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$Y^{89} - Hf^{178}$	−7.07 ± 0.05	
$Zr^{90} - Hf^{180}$	−7.70 ± 0.03	
$Zr^{91} - W^{182}$	−7.45 ± 0.04	
$Zr^{92} - Ba^{138}$	−3.58 ± 0.05	
$Zr^{92} - W^{184}$	−7.53 ± 0.04	
$Mo^{94} - Pr^{141}$	−2.54 ± 0.05	
$Mo^{96} - Nd^{144}$	−3.66 ± 0.03	
$Mo^{100} - Nd^{150}$	−4.09 ± 0.04	
$Sn^{118} - Th^{232}$	−9.89 ± 0.03	G. S. Stanford, H. E. Duckworth, Phys. Rev. 83, 229(A)(1951).
$Sn^{119} - U^{238}$	−10.24 ± 0.03	
$Te^{126} - Cu^{63}$	+3.61 ± 0.07	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$Te^{128} - Zn^{64}$	+3.91 ± 0.07	
$Te^{130} - Cu^{65}$	+3.98 ± 0.06	
$Te^{130} - Pt^{196}$	−5.45 ± 0.11	
$Xe^{130} - C_3H_7$	−20.15 ± 0.02	C. L. Kegley, H. E. Duckworth, Phys. Rev. 83, 229(A)(1951).
$Xe^{130} - C_2OH_3$	−11.68 ± 0.02	
$Xe^{132} - C_2OH_4$	−13.08 ± 0.02	
$Xe^{132} - CO_2$	−4.90 ± 0.02	
$Ba^{138} - Zr^{92}$	+3.58 ± 0.05	H. E. Duckworth et al., Phys. Rev. 83, 1114(1951).
$Ce^{140} - Ge^{70}$	+4.25 ± 0.03	
$Pr^{141} - Ti^{47}$	+3.64 ± 0.03	
$Pr^{141} - Mo^{94}$	+2.54 ± 0.05	
$Nd^{144} - Ge^{72}$	+4.85 ± 0.07	
$Nd^{144} - Mo^{96}$	+3.66 ± 0.03	
$Nd^{148} - Ge^{73}$	+4.64 ± 0.08	
$Nd^{150} - Mo^{100}$	+4.09 ± 0.04	
$Hf^{176} - Sr^{88}$	+7.11 ± 0.04	
$Hf^{180} - Ni^{60}$	+8.57 ± 0.03	
$Hf^{180} - Zr^{90}$	+7.70 ± 0.03	
$Hf^{178} - Y^{89}$	+7.07 ± 0.05	
$W^{182} - Zr^{91}$	+7.45 ± 0.04	
$W^{184} - Zr^{92}$	+7.53 ± 0.04	
$Pt^{196} - Te^{130}$	+5.45 ± 0.11	
$Th^{232} - Fe^{58}$	+13.17 ± 0.06	G. S. Stanford, H. E. Duckworth, Phys. Rev. 83, 229(A)(1951).
$Th^{232} - Sn^{118}$	+9.89 ± 0.03	
$U^{238} - Sn^{119}$	+10.24 ± 0.03	

NATIONAL NUCLEAR ENERGY SERIES (NNES)

The National Nuclear Energy Series has been planned as a comprehensive record of the research work done under the Manhattan District and the Atomic Energy Commission. Sixty declassified volumes have been planned in the Series, of which the following have already been published by the McGraw-Hill Book Company.

	ELECTROMAGNETIC SEPARATION PROJECT		
Div. I, Vol. 1	Guthrie and Wakerling, "Vacuum Equipment and Techniques"	xviii plus 264 pages, 104 illustrations	For list of contents see: NSA 4, No. 17, p Q
Div. I, Vol. 5	Guthrie and Wakerling, "The Characteristics of Electrical Discharges in Magnetic Fields"	xviii plus 376 pages, 234 illustrations	For list of contents see: NSA 4, No. 16, p S
	GASEOUS DIFFUSION PROJECT		
Div. II, Vol. 16	Benedict and Williams, "Engineering Developments in the Gaseous Diffusion Process"	xx plus 129 pages, 44 illustrations	For list of contents see: NSA 4, No. 16, p S
	SPECIAL SEPARATIONS PROJECT		
Div. III, Vol. 1 B	Cohen, "The Theory of Isotope Separation as Applied to the Large-scale Production of U^{235}"	xviii plus 165 pages, 34 illustrations	
Div. III, Vol. 2	Dieke and Duncan, "Spectroscopic Properties of Uranium Compounds"	xviii plus 290 pages, 22 illustrations	For list of contents see: NSA 5, No. 22, p B
Div. III, Vol. 4 C	Kimball, "Bibliography of Research on Heavy Hydrogen Compounds"	xv plus 350 pages, 0 illustrations	For list of contents see: NSA 5, No. 22, p C
	PLUTONIUM PROJECT		
Div. IV, Vol. 9	Coryell and Sugarman, "Radiochemical Studies: The Fission Products" (Three Volumes)	lxv plus 2086 pages, 656 illustrations	For list of contents see: NSA 5, No. 9, p F
Div. IV, Vol. 14 B	Seaborg, Katz, and Manning, "The Transuranium Elements" (Two Volumes)	xlviii plus 1730 pages, 426 illustrations	For list of contents see: NSA 4, No. 15, p Q
Div. IV, Vol. 19 B	Quill, "The Chemistry and Metallurgy of Miscellaneous Materials; Thermodynamics"	xxii plus 329 pages, 25 illustrations	For list of contents see: NSA 4, No. 14, p R
Div. IV, Vol. 20	Stone, "Industrial Medicine on the Plutonium Project"	xxiv plus 509 pages 115 illustrations	For list of contents see: NSA 5, No. 13, p F
Div. IV, Vol. 22 E	Zirkle, "Effects of External Beta Radiation"	xxv plus 242 pages, 81 illustrations	For list of contents see: NSA 5, No. 22, p A
Div. IV, Vol. 22 I	Bloom, "Histopathology of Irradiation from External and Internal Sources"	xxv plus 808 pages, 550 illustrations	For list of contents see: NSA 5, No. 22, p A
Div. IV, Vol. 23	Tannenbaum, "Toxicology of Uranium"	xx plus 351 pages, 68 illustrations	For list of contents see: NSA 5, No. 2, p E
	LOS ALAMOS PROJECT		
Div. V, Vol. 1	Elmore and Sands, "Electronics: Experimental Techniques"	xviii plus 417 pages, 182 illustrations	For list of contents see: NSA 5, No. 22, p C
Div. V, Vol. 2	Rossi and Staub, "Ionization Chambers and Counters: Experimental Techniques"	xviii plus 243 pages, 148 illustrations	For list of contents see: NSA 5, No. 22, p C
	UNIVERSITY OF ROCHESTER PROJECT		
Div. VI, Vol. 1	Voegtlin and Hodge, "Pharmacology and Toxicology of Uranium Compounds" (Two Volumes)	xvii plus 1084 pages, 374 illustrations	For list of contents see: NSA 4, No. 17, p Q
Div. VI, Vol. 3	Fink, "Biological Studies with Polonium, Radium, and Plutonium"	xvi plus 411 pages, 95 illustrations	For list of contents see: NSA 4, No. 14, p R

NATIONAL NUCLEAR ENERGY SERIES (NNES)

MATERIALS PROCUREMENT PROJECT

Div. VII, Vol. 1	Slesser and Schram, "Preparation, Properties, and Technology of Fluorine and Organic Fluoro Compounds"	xxiii plus 868 pages, 243 illustrations	For list of contents see: NSA 5, No. 20, p A

MANHATTAN PROJECT

Div. VIII, Vol. 1	Rodden, "Analytical Chemistry of the Manhattan Project"	xx plus 748 pages, 152 illustrations	For list of contents see: NSA 5, No. 2, p F
Div. VIII, Vol. 5	Katz and Rabinowitch, "The Chemistry of Uranium, Part 1: The Element, Its Binary and Related Compounds"	xxi plus 632 pages, 69 illustrations	For list of contents see: NSA 5, No. 22, p B

AEC, Oak Ridge, Tenn.,-8/1917